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SEPTEMBER 10 1960

BRITISH PHARMACEUTICAL CONFERENCE NUMBER



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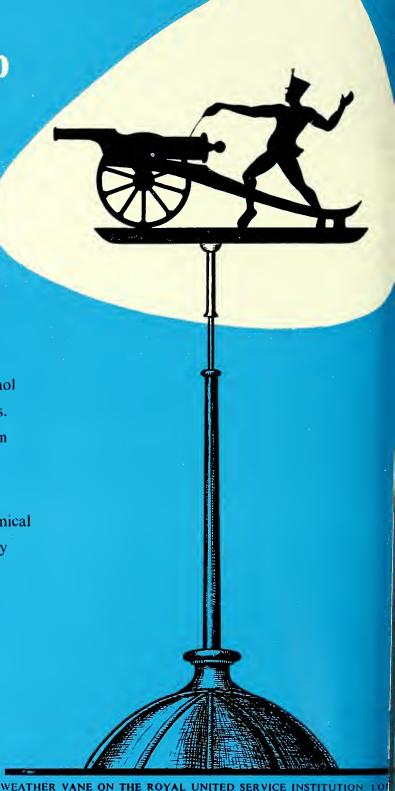
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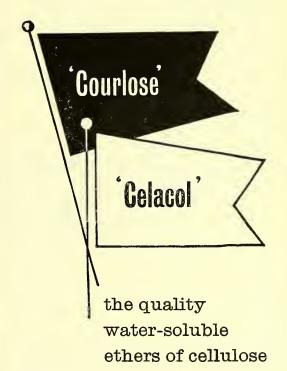
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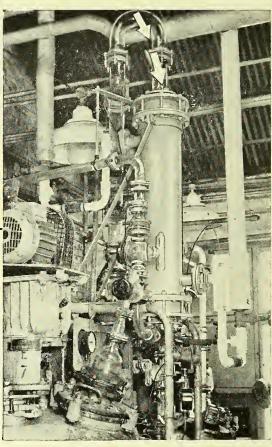
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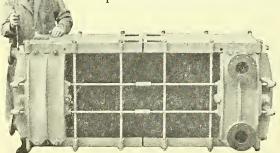


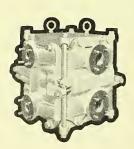
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THE CHEMIST AND DRUGGIST

ESTABLISHED 1859

The weekly newspaper for pharmacy and all sections of the drug, pharmaceutical and fine chemical, cosmetic, and allied industries

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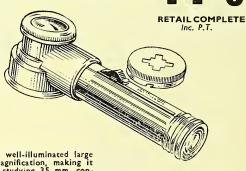
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Volume 174

SEPTEMBER 10, 1960

No. 4204

The Change to Metric PROPOSALS FOR LEGISLATION

THE British Pharmacopæia Commission which has been considering ways and means of bringing about the use of the metric system in place of the apothecaries' system of weights and measures has been holding meetings with a number of interested organisations, including the Pharmaceutical Society of Great Britain and the British Medical Association.

In a recently issued statement the Commission say that the following points have emerged during their deliberations:—

1. Whilst the replacement of the apothccaries' system by the metric system in certain liquid medicines would raise complicated problems, the abandonment of the apothecaries' system in relation to many official dosage-form preparations offered an attractive first step.

step.

2. If the metric system is adopted in expressing the strength of dosage-form preparations (tablets, capsules and injections) of the Pharmacopæia, it should at the same time be adopted for similar preparations described in the British Pharmaceutical Codex and the British National Formulary.

3. In order to abolish the use of the apothecaries' system for tablets, capsules and injections of the B.P., B.P.C., and B.N.F., it will be necessary to stipulate:

(a) the strength in metric units which must be dispensed or supplied in the absence of directions on the prescription or order.

(b) the strength in metric units which must be dispensed or supplied when a strength in apothecaries' units is stated on the prescription or order.

4. Legislation would be necessary in order to adopt 3(b).

The Commission explored the possibility of a Parliamentary Bill and outlined a proposed measure which was placed before the British Medical Association and the Pharmaceutical Society. The Councils of the Association and the Society have endorsed the proposal by the adoption of the following recommendation:—

"That the Councils of the British Medical Association and the Pharmaceutical Society assist in sponsoring or supporting legislation to secure that when tablets, capsules (and other named dosage forms) described in the British Pharmacopœia, British National Formulary and British Pharmaceutical Codex are prescribed or demanded with the strength stated in the apothecaries' system, the equivalent metric strength stated in the Schedule to the Bill must be dispensed or supplied."

The announcement by the Commis-

sion states the following points should be noted in connection with the proposals:—

posals:—

1. This is a partial abandonment of the apothecaries' system and applies only to certain named dosage-forms of drugs included in the British Pharmacopæia, British Pharmaceutical Codex and British National Formulary.

2. It would be necessary to provide an interim period adequate for the disposal of stocks of preparations made according to the apothecaries' system.

3. When the change became fully effective it would not be necessary for pharmacists to hold stocks of the preparations concerned which had been made under the apothecaries' system.

4. Whilst it is expected that the prescribing of these preparations in the metric system will increase, the prescriber would remain free to use the apothecaries' system.

5. The pharmacist would be provided, by means of the schedule, with a clear statement of the strength by weight in metric units which must be supplied when the B.P., B.P.C. and B.N.F. preparations concerned are prescribed or demanded in the apothecaries' system.

The following table has been com-

piled with regard to the strengths of tablets, capsules, and injections described in the British Pharmacopæia. The intention is that when a tablet, capsule, or injection is prescribed or demanded with the strength by weight as one of the apothecaries' quantities given in the left-hand column, tablets, capsules, or an injection containing the corresponding metric quantity shown alongside it must be dispensed or supplied:—

Schedule of Apothecaries' and Metric
Ouantities.

gr.	mgm.	gr.	mgm.
10	600	1/15	4
7⅓	450	1/20	3
$\frac{7\frac{1}{2}}{5}$	300	1/25	2.5
4	250	1/30	2
3	200	1/40	1.5
$2\frac{1}{2}$	150	1/50	1.25
2	125	1/60	1
$1\frac{1}{2}$	100	1/75	0.8
1	60	1/100	0.6
34	50	1/120)	0.5
$\frac{1}{2}$	30	1/130	0.5
2/5	25	1/150 \	0.4
1/3	20	1/160	0.4
$\frac{1}{4}$	15	1/200	0.3
1/5	12.5	1/240	0.25
1/6	10	1/300 \	0.2
$\frac{\frac{3}{4}}{\frac{1}{2}}$ $\frac{1}{2}$ $\frac{2}{5}$ $\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{7}$ $\frac{1}{6}$ $\frac{1}{8}$	7.5	1/320	0.2
1/10	6 5	1/480	0.125
1/12	5	1/600	0.1

Oral Polio Vaccine

BRITISH DEVELOPMENT

THREE British manufacturers have developed an oral poliomyelitis vaccine of the Sabin type that was recently granted official recognition as an immu-



REGISTERING FOR THE CONFERENCE: Members receiving their documents on arrival for registration at the Newcastle-on-Tyne meeting of the British Pharmaceutical Conference (see p. 298).

nising agent in the United States. Burroughs Wellcome & Co. and Glaxo Laboratories, Ltd., are completing investigations in their research laboratories. while Pfizer, Ltd., state that they have commenced manufacture of the vaccine at their Sandgate factory. The poliomyelitis syrup now undergoing trial at various welfare centres in Great Britain is a gift from Dr. Sabin, and has so far been administered to about 500 babies aged from six to nine months. Organ-ised by the Medical Research Council in conjunction with the Ministry of Health, the trial is being undertaken to determine the minimum dose of vaccine necessary for adequate antibody production, and to discover how long the protection thus afforded will last. The vaccine is a suspension of living polio virus, sufficiently attenuated to eliminate paralytic effects without loss

Removal Expenses

of antigenicity.

HELP FOR SOME PHARMACISTS

A GRANT towards removal expenses when changing employment may be obtained by certain staff in the National Health Service following a new scheme introduced by the Ministry of Health. The scheme applies to a limited range of grades in the higher ranks of the service, including chief pharmacists, and deputy chief pharmacists with a salary maximum equal to or higher than that of a chief pharmacist, category I. covers changes of employment only between any two of the following authorities—Regional Hospital Boards, Boards of Governors of Teaching Hospitals, Hospital Management Committees, Boards of Management, Executive Councils, the Dental Estimates Boards and the Pricing/Drug Accounts Committees. Only those who are already householders at appointment to a new post are to be eligible for grants.

BRITISH ASSOCIATION

Addresses at Cardiff meeting

"THE dependence of technology on pure science is now pretty generally recognised by industry," declared Sir George Thomson (Master of Corpus Christi College, Cambridge) in his presidential address to the appropriate meeting dential address to the annual meeting of the British Association for the Advancement of Science in Cardiff on August 31. Sir George said that the more progressive industries maintained research laboratories which both made use of the basic discoveries made in the universities and elsewhere, and contri-buted their own. There were black buted their own. There were black spots, of course: industries that spent too little on research or organised it badly, but "broadly speaking the need is realised and reasonably well met.

Addressing the Association on September I, on the increasing scope of scientists' work in industry, Sir James Taylor (a director, Imperial Chemical Industries, Ltd.) said that, in the struggle for existence from restricted resources, Britain's position was precarious because she had no monopoly of brains or creative ideas. She needed all the help scientists could give. Students in science were trained by school and university teachers who for the most part had no personal experience in industry outside their own specialised sphere. The approach consequently tended to be too scholastic in its fundamentals and not infrequently flavoured with the convicition that anything which was of practical application was either suspect or unworthy. It was not sur-prising that the graduate, relatively mature by the time he obtained industrial employment, found the process of adaptation both difficult and perplex-To prosper in a competitive world,

Britain must have an adequate supply of new discoveries and ideas to provide for future progress. A considerable number of promising research chemists must be given freedom to pursue their studies without ties or pre-selected tar-gets, and their work must be judged by its scientific quality and not by its immediate practical value. Outstanding discoveries occurred rarely and could not be forced. Any nation that committed its future to science must be patient and not be perpetually digging up the plants to see how they were growing.

In the industrial field, Dr. Taylor said: "The notable feature of the present century is the growth of the great scientifically based industries. These are not casual developments but have arisen out of the needs of the time; the result of the interplay of the forces of business and science. . . . Most large industries are run by men who, like all the other employees, are servants of the company, and they have no incentive to unfair exploitation of the employees, the customers or the shareholders. In-dustry has developed a sense of public responsibility and accountability which in my view is to no small extent due to the influx of considerable numbers of scientific and technical people. Contempt of industry is out-of-date.

The Profit Motive

Industry exists to supply the goods and services the public requires. It presents both a challenge and an opportunity to all the skills of the nation. Further, it must operate at a profit or it cannot maintain, re-equip and modernise its plants and service its capital requirements. There is much misrepresentation about the profit motive. In fact, it is a perfectly understandable objective whether in private or nationalised industries.

The object of efficient industry is to produce the goods and services required with the least expenditure of human effort, and that means as cheaply as possible, since human effort is measured in terms of money. The consideration of economy of effort must be applied not only to direct labour, but to plant, buildings and equipment. That is evident when we recall that plant and equipment, however automatic they may finally be in operation, have been fashioned by human labour and their capital value represents an accumula-

tion of human effort." Of the chemical industry Dr. Taylor pointed to the great contribution it was making to the country's prosperity. Since the war it had become a major world supplier of chemicals. Exports were currently £280 millions a year, which gave it third place in the United Kingdom's list of exports. While formerly the chemical industry directed and controlled by men of nonscientific education, nowadays their place had largely been taken by men with scientific educations. Equally important, such men had achieved, in considerable numbers, positions of general and administrative responsibility.

VETERINARY DISEASE

Prospects for the winter

THE weather over much of England and Wales during April, May and June was very dry, giving promise of another fluke-free year. Since July, however, there has been a marked change in the weather and a continuance of the wet weather during September and October is likely to produce some disease this winter, states the Ministry of Agriculture. Fortunately, the onset of conditions favourable to the development of the fluke has come too late to give rise to severe outbreaks of disease such as were experienced in the winter of 1958-59. The indications are that the season will be an average one, with stock in flukey areas acquiring a little infection. Occasional losses in sheep could be expected on farms where the disease was known to be a problem. Losses could be slightly heavier in flukey areas in South and Mid Wales and in midland counties east of the Bristol Channel because conditions there have been somewhat more fav-ourable for the development of the fluke. In those areas, the fluke infection was expected to pass from the snail to the herbage in the last fortnight of September; in other areas infection of the herbage is not likely to occur until October.

It is well known that treatment of sheep with the standard dose of either carbon tetrachloride or hexachloro-ethane does not kill flukes that have been living in such sheep for less than twelve weeks. Since infection of the herbage this year is unlikely to occur before September, farmers are advised to dose their sheep in December and in January where the onset of the lambing season makes that possible. Dosing during those months would greatly benefit all stock. The Ministry recommends that replacement ewes bought during autumn whose history is not known should be dosed as soon as possible, and cattle at risk in late autumn and winter would benefit from treatment with hexachloroethane in January. More Black disease is expected this year than last and ewes on farms where the disease has occurred should be vaccinated during autumn in order to prevent any recurrence of the disease which could arise even under conditions of very low fluke infestation.

NEWS IN BRIEF

LIVERPOOL pricing bureau has removed to second floor, Refuge Assurance House, Lord Street, Liverpool 2. The telephone number is unchanged.

THE Incorporated Sales Managers' Association has arranged courses in twenty-one cities throughout Britain, starting in September, for a diploma in marketing.

A TWENTY-PAGE illustrated supplement describing Government Scrvices for Exporters is published in the *Board of Trade Journal* issue of Scptember 9.

SIR Wilfred Le Ros Clark, the anatomist, is to be the next president of the British Association. He was elected at a meeting of the Association's general committee on August 31.

CAMERAS valued at between £70 and £80 were recently taken by a smash and grab thief from the pharmacy of Mr. E. C. Sleep, M.P.S., 44 West Street, Porchester, Hants.

PROFESSOR Fred Grundy (Mansel Talbot Professor of Preventive Medicine, Welsh National School of Medicine, Cardiff) has been appointed assistant director-general of the World Health Organisation.

A LABORATORY assistant, Mr. J. Blake, aged twenty-four, died after being overcome by cyanide fumes in a laboratory at Roche Products, Ltd., Welwyn Garden City, Hcrts. Dr. A. Cohen who went to help Mr. Blake was also overcome by the fumes but recovered after hospital treatment.

AIMED at promoting in all countries the highest standards of mental health, the World Federation for Mental Health held its twelfth annual meeting in Edinburgh recently. For the current year the Federation, with the aid of pharmaceutical manufacturers, hospitals and psychiatric organisations, has a programme of health education (films, talks and publications).

ADOPTION of Russian, along with English and French, as a working language of the World Health Organisation's regional organisation for Europe was recommended by the regional committee for Europe of W.H.O. at its tenth session in Copenhagen. The recommendation now goes to the W.H.O. executive board and the World Health Assembly for final decision.

THE Plastics Institute has made the first award of the Swinburne medal to Professor G. Gee (professor of chemistry, Manchester University) for his outstanding contributions to the advancement of polymer chemistry. Professor Gee is to deliver his Swinburne address at the Royal Institution on February 16, 1961, when he will be presented with the gold medal and the sum of money which accompanies the award endowed by Bakelite, Ltd.

SPORT

Golf.—Lonoon Chemists' Golfing Society, at Finchley golf club on August 31. It was visitors' day. Sanger Cup and Prize, R. H. Davies (captain) (10), 74; Aspro Rose Bowl and Prize, R. M. Pierce-Williams (7) all square; Jubilee Vase and Prize, R. C. W. Poole (15), 72; Visitors' Prizes, 1, L. N. Little (13), 68; 2, I. Davies (23), 69.

TOPICAL REFLECTIONS

By Xrayser

A citizen of the world

In one of the short stories of the inimitable O. Henry, we are introduced to one E. Rushmore Coglan, fittingly described by the author as a cosmopolite. He spoke, to use the writer's own words, disrespectfully of the equator, he skipped from continent to continent, he derided the zones, he mopped up the seas with his napkin. Coglan, it appeared, paid rent on a room in Cairo, Egypt, and another in Yokohama all the year round. He had shippers waiting for him in a tea-house in Shanghai and didn't have to tell them how to cook his eggs in Rio de Janeiro or Seattle. "Patriotism," declared Coglan to his friend in the cafe, "is a relic of the stone age. We are all brothers—Chinamen, Englishmen, Zulus, Patagonians, and the people in the bend of the Kaw river. Some day all this petty pride in one's city or state or section or country will be wiped out and we'll all be citizens of the world, as we ought to be." The terrestrial, globular, planetary hunk of matter, slightly flattened at the poles, and known as the earth, was his abode. The cosmopolite joined a friend at another table, and, a little later, he and his new companion were engaged in terrific battle. O. Henry called one of the waiters and asked him the cause of the conflict. "The man with the red tie"—the cosmopolite—"got hot on account of things said of the place he came from by the other guy." The citizen of the world, it appeared, came originally from Mattawamking, Maine, and, in the waiter's words, "he wouldn't stand for no knockin' the place." Banchory obscure! A thousand pardons, Mr. Murdoch! (p. 216). I'll be more careful in future.

A different approach

The full account of pharmaceutical conditions in Denmark (p. 254 et seq.) is of the greatest interest to us in this country in showing some of the effects of the influence of a form of state control. There is undoubtedly, as you say, in a different connection in your editorial article "Ensuring the Succession," a great deal of satisfaction in personal independence, and in being monarch of all that one surveys, but modern trends in this country suggest that that position is likely to be less common in the future than it has been in the past. There are many reasons for this, but the principal one is financial. The young man of today has no difficulty in finding employment at a salary which may make him chary of branching out on his own account. The only businesses likely to be within his financial capacity would be unlikely to yield any more than he can obtain as manager or assistant. So it is that we find an increasing number of pharmacies failing to find a ready market when their present owners decide to call it a day, with the tragic result that businesses which have had a long and honourable career disappear from the scene. Their owners, who struggled to make themselves monarchs over the years, go out unwept, unhonoured and unsung, carrying with them a feeling of deep disappointment that such a fate is the reward for a lifetime's service. Alternatively, a business may be too good and therefore too costly to enter into the young man's calculations. It seems, then, that the future may see a still larger percentage of employed pharmacists.

Sensible provision

As your article on Danish_pharmacy shows, there the question of pharmacy purchase is not one which disturbs the young pharmacist, who must resign himself to a long period of assistantship, and who may never reach the heights. But the arrangements are not without merit. They show the commendable concern for the welfare and comfort of those who have given long and faithful service by reducing the hours of work in a carefully graduated manner according to age, at the same time providing more money instead of less, by the payment of a supplementary salary. The provision of greater security against dismissal in the higher age groups is also commendable and enlightened. It may be that our greater freedom is purchased at rather a high price, when one sees nothing at the end of the day but to close the door.

BRITISH PHARMACEUTICAL CONFERENCE



A view of the Conference as the chairman makes his opening address.

Ninety-seventh meeting opens at Newcastle

THERE had been four occasions when the British Pharmaceutical Conference had met in Newcastle-on-Tyne, said MR. Tom REID (president of the Conference and of the Pharmaceutical Society) when opening the ninety-seventh annual meeting of the British Pharmaceutical Conference in the City Hall, Newcastle-on-Tyne, on September 5. The first marked the origin of the Conference, and twenty-one members were present. There were three from Newcastle and also a "couple of marauding Scots—which gave him special pleasure." Later meetings took place in 1889 and in 1909. By then the numbers had subsequently increased, and the meetings were, according to reports, highly successful. He was certain that the ninety-seventh meeting would also be as successful.

Mr. Reid then introduced the LORD MAYOR of Newcastle-on-Tyne (alderman Mrs. Gladys Robson, J.P.), who welcomed members to the Conference, saying "We are proud to remember the Conference began in the city." Newcastle had much to offer and she hoped that members would enjoy their stay. In 1909 the lord mayor, who welcomed the Conference members, had been a man. Now the lord mayor was a woman. Nevertheless the welcome was just as sincere. She was sure it would be a rewarding and successful Conference and that all would have a happy stay in the city.

MR. REID thanked the lord mayor for the official welcome and for the promise of all the city had to offer, and looked forward to meeting her again at the official reception. He then handed over the conduct of the Con-

ference to the chairman (Professor W. H. Linnell) with the hope that he would have a satisfying and successful Conference.

PROFESSOR LINNELL referred to the fact that he had served his apprentice-ship in the Newcastle district and had received his early education in the Armstrong College, now known as King's College. He said he had resisted the temptation to deal with a technical problem of research in his formal speech. He thought that the need was for something of general interest, and something that needed to be said at the present. He then gave his formal speech (see p. 314).

(see p. 314).

DR. A. H. BECKETT, in proposing a vote of thanks to the chairman, said he was pleased he had decided not to deal with specialist aspects. The status of actual research in pharmacy could largely be attributed to the lead given by Professor Linnell, Britain still led in pure research but could that position be held if so little money continued to be spent on it? MR, A. R. G. CHAMINGS, who seconded, hoped that the chairman's address would reach those countries in which freedom was less evident than in Britain.

Civic Reception

AS guests of the Newcastle City Council at the Old Assembly Rooms on Monday evening members of the Conference were received by the lord mayor (Mrs. Gladys Robson) and lady mayoress (Mrs. Russell, daughter of the lord mayor) and by the chairman of the Conference Local Committee (Mr. M. Clarke) and Mrs. Clarke. Some of

the more privileged (members of the Conference Executive) were then entertained by members of the City Council, including the deputy lord mayor (councillor S. H. Bell) to a sherry party. The remainder enjoyed dancing in the newly decorated stately ball room.

Banquet

THE president, proposing the first toast at the Conference banquet on September 6, warmly thanked Newcastle for its welcome and generous hospitality to delegates. Newcastle of all towns and cities the Conference had visited, he said, had great distinction because it was in Newcastle that the Conference was founded ninety-seven years ago. On all previous occasions reference had been made to the wonderful hospitality of the citizens of Newcastle, "May I go on a record as saying that that is a masterly understatement."

THE LORD MAYOR (Mrs. Gladys Robson) said how happy they were to have pharmacists in Newcastle-on-Tyne once more, and how proud they were that the Conference had been born there. The inhabitants were planning now to make their city into the finest in Europe. Much redevelopment of the city was in hand, and she hoped the Conference would return in five years' time to see the city being rebuilt.

SIR KENNETH SWAN, in proposing the toast "The British Pharmaceutical Conference," confessed that Conference banquets were not a form of entertainment to which he was much addicted, but added that when he received the invitation to attend he deeply appreciated the compliment implied to his father. The prospect of a visit to Tyne-





CIVIC RECEPTION:
At left, alderman Mrs.
G. Robson (lord mayor
of Newcastle-on-Tyne)
with Mr. T. Reid
(president of the Conference) and Professor
W. H. Linnell (chairman of the Conference); at right, Mr.
T. D. Clarke (chairman
of the Local Conference Committee) and
Mrs. Clarke with alderman Mrs. G. Robson.

side was itself an inducement since, though now a southerner, he regarded Newcastle as his spiritual home. Sir Kenneth said that his father, at the age of thirty-five, had attended the inaugural meeting of the British Pharmaceutical Conference in 1863, though there was no record that his father had taken an active part in the proceedings on that occasion. Essentially a freedom-loving man, his father recognised science as the only taskmaster. Sir Kenneth was sure that it was essentially the experiences he had gained as a pharmaceutical apprentice that had given him a sound working knowledge of chemical apparatus and had resulted in his many notable inventions. His father prized greatly the honour conferred on him when the Pharmaceutical Society made him an honorary member.

Sir Kenneth then spoke of his own connection with pharmacy, and referred to the new science of chemotherapy "progenitar of a whole for" "progenitor of a whole family of synthetic chemicals"—of sulphonamides and antibiotics, "a rich harvest indeed." In speaking of such things he was on thin ice, and must tread carefully in case he broke the "perilously thin crust of superficial knowledge."

After the 1914-18 war he had been engaged in deciding whether a number of substances such as tartaric acid and synthetic camphor were fine chemicals under the Safety of Industries Act. Later he had been involved in a legal case concerning hexylresorcinol, and in another he had learned some of the mysteries of biochemistry. After the 1939-45 war he had been a member of the Royal Court of Awards for Inventors, and he had dealt with DDT, when he had devised the following jingle:-

Oh sing of its power, Oh tell of its might,

To vanquish all vermin and put them to flight,

Aseptic, synthetic, A marvellous chain,

Di-chloro-diphenyl-trichloro-ethane.

Professor Linnell, in thanking Sir Kenneth for his toast, said the pharmacist gained an education in a fairly wide variety of subjects. Pharmacy today had no narrow connotation, and any success he himself had had was due to his pharmaceutical training. Pharmacists were able, because of their wide knowledge of a number of disciplines, to make their special contribution to human welfare. The Conference had, so far, been one of the happiest he had attended, and "everybody of any im-

portance in pharmacy" was with them that night.

DR. J. G. DARE, in proposing "The Guests," specially included Sir Hugh and Lady Linstead, and mentioned Sir Hugh Linstead's work as president of the International Pharmaceutical Federation. The British Pharmaceutical Conference, he said, included visitors from the United States, Nigeria, New Zealand, South Africa, Belgium, Germany, Holland, India, Rhodesia, Pakistan, Ghana and "both sides of the border in Ireland."

Professor W. F. K. Wynn Jones (department of chemistry, King's College, Newcastle), replied on behalf of the guests.

Excursions

On the Roman Wall

One of the best meeting places for Conference visitors was found to be the Roman Wall, the venue of Monday afternoon's excursion for the ladies (and more than a sprinkling of gentlemen!). With two-way traffic along the top of the Wall, visitors were given a first-class opportunity of shaking hands with their friends and renewing old acquaintances. This, it was suggested, was a subtle plot laid by members of the local committee with the object of

mixing their guests—a sort of Roman "Paul Jones"! Although a trifle chilly, the day was at least dry—a welcome change from the inclement weather experienced by most visitors on their way to Newcastle. A stop was made at Hexham for tea, but unfortunately there was no time to see the beautiful Abbey, in which delegates to the 1889 Newcastle Conference listened to an organ recital during their main excursion. After Hexham the excursion passed through Corbridge, with its magnificent river, and so back to the hostels and hotels with just time enough to prepare for the next round—the Civic reception and dance.

Durham

The chance to visit the noble cathedral of Durham was seized by several coachloads of Conference ladies and seduced from Tuesday's Professional Session even a few males. All were rewarded. An informed guide brought vividly to the imagination the circumstances of the Cathedral's inspired creation, favoured by the happy conjuncture of imported master craftsmen, stone in plenty and ready finance. They were made to appreciate the cunning artistry of patterns wrought in standard carved units, "mass-produced" 850 years before the era of mass-produc







Two parties leaving for excursions to the Roman wall,

tion; were shown links with even earlier Saxon monks; were given demonstrations of reverberating echoes that must have frustrated many a meeting of the Dean and Chapter; heard tales of long-

dead misogynists and explanations of a misplaced Lady Chapel; and saw England's earliest pointed arches and the unique stone vaulting over a Norman nave. Even their mid-morning

coffee was creamed with history, sipped as it was within the Norman castle nearby before the return to Newcastle to join hard-working husbands and friends for lunch.

INTERNATIONAL PHARMACEUTICAL FEDERATION INTERNATIONAL CONGRESS OF PHARMACEUTICAL SCIENCES

Royal opening for Copenhagen meetings

AS briefly reported last week (C. & D., September 3, p. 269), the eighteenth general assembly of the International Pharmaceutical Federation and the twentieth International Congress of Pharmaceutical Sciences was held in Copenhagen, Denmark, August 29 to September 2. September 2

The assembly's opening ceremony on August 29, throughout which the King of Denmark was present, took place in the architecturally beautiful and acoustically perfect Tivoli concert hall. Indeed the congressists were given the opportunity of sampling its excellence as a concert hall because the business of the meeting was interspersed with music by Scandinavian composers excellently rendered by the Concert Hall orchestra.

Compliment to Dr. Host-Madsen

After addresses of welcome by the chairman of the organising committee (Mr. E. Bjorn), the president of the International Pharmaceutical Federation (Sir Hugh Linstead) and the president of the scientific section (Mr. R. Hugh referred to the presence of King George of Denmark as a recognition of the value of the work of the congress; paid tribute to his own Danish predecessor in office-Dr. Host-Madsen who "through good times and bad had kept the Federation alive by his tenacity"; and complimented the Danish hosts of the congress as having arrived at an admirable mixture of freedom and control in the pharmaceutical service they had developed: freedom for the individual pharmacist and a control exercised largely by the pharmaceutical organisations themselves. It was a system many other countries envied and it had many profitable lessons to teach: its critics were drawn mainly from

those waiting impatiently for the right to own a pharmacy. The system provided the essentials for a first-class

pharmaceutical service to the public and a satisfying life's work for the pharmacist.

Interconnection of all Sciences

PROFESSOR NIELS BOHR'S ADDRESS

The main address of the session was, however, by the president of the Royal Danish Academy of Sciences, Professor Niels Bohr. Professor Bohr commented on the intimate connection between knowledge in all branches of science. That connection, he said, had been emphasised by Hans Christian Orsted, who had established the first regulated pharmaceutical examination in Den-

mark, and whose constant inspiration it had been in his researches.

Experience of the help naturally occurring substances could give in the cure of human disease went back to the infancy of civilization, before the idea of rational scientific inquiry had arisen. Yet the search for medicinal herbs in woods and meadows had stimulated the development of systematic botany; and the preparation of medicinal medicine and study of their effects. medicaments and study of their effects had proved essential for the progress of chemistry.

For a long time the study of the pro-

perties and transformations of substances had stood conspicuously apart from the endeavours characteristic of the approach in physics. Development in the nineteenth century of ancient ideas of atomic constitution had stimulated the search for a closer connection between chemistry and physics. The concept of chemical elements had led to the understanding of the laws governing the proportions in which those elements entered into chemical combinations, and studies of thermal radiative equilibrium, based on electro-magnetic theory, had disclosed in atomic processes a feature of wholeness irreconcilable with the ideas of classical physics. In individual atomic processes were found regularities of a novel kind that were responsible for the peculiar stability of atomic systems. To account for what was done and learnt in physical experimentation, it was necessary to describe the experimental arrangement and the recording of observations in common language. But in the study of atomic phenomena the situation presented itself in which the repetition of an experiment with the same arrangement might lead to different recordings, and experiments with different arrangements might give results that at first sight seemed contradictory

Those apparent paradoxes had been elucidated by recognition that the interaction between the objects under investigation and the tools of observation formed, in the domain of quantum physics, an inseparable part of the phenomena. In any process resulting in chemical combinations, the properties of the new molecules did not primarily depend on the composition of the interacting molecules, but only on the relative placing of the atoms of which they were made up.

The general understanding of the specific properties of matter, to which the quantum of action provided a clue, had initiated a period of rapid growth of the natural sciences. Among the most

impressive of those developments was the modern rise of biochemistry, which had been equally beneficial to physi-ology and to pharmacology. Substantial obliteration of the distinction between organic and inorganic chemistry had raised anew the old problem of the extent to which the physical sciences could account for the display of life. Investigations into the exchange of energy and entropy accompanying the metabolism and movements of organisms had, however, never disclosed any limitations of thermodynamical principles.

Knowledge of Molecular Structures

Great progress had been achieved in knowledge of the complicated molecular structures of living cells and of the specific molecular chains that carried the genetic information from generation to generation. Insight into the enzymatic processes, by which that information served to direct the formation



Excellency Niels Bohr (president of the Royal Danish Academy of Sciences).

of other specific molecular structures (such as the proteins) was steadily increasing. In fact, what might be involved was a steady increase in the stability of the constitution of the cells, with an expenditure of free energy corresponding to the increase of en-tropy in usually irreversible chemical processes.

On that background the view suggested itself that the whole life of the organism was concerned with processes of not immediately reversible character corresponding to an ever-increasing stability under the prevailing conditions maintained by nutrition and respira-tion. In spite of all differences of scale and function, there emerged a far-

reaching similarity between living organisms and automatic machines. Indeed, on the basis of recent advances in technology it was possible to design machines reacting in any prescribed manner, including their own repair and reproduction, provided that they had access to the necessary materials and energy sources.

Still, organic life was a manifestation of nature's resources far beyond those used for the construction of machines. In explaining the functioning of devices for calculation and control, the atomic constitution of matter could essentially be disregarded, and attention confined to the mechanical and electrical properties of the materials used and to the application of the simple physical laws governing interactions between the parts of the machine. The whole history of organic evolution presented results of the trying-out in nature of the immense possibilities of atomic interactions.

Because of their immense complexity it was not surprising that the organisms revealed properties and potentialities in striking contrast with those exhibited by so-called inanimate matter under simple reproducible experimental conditions. On that background such notions as purposefulness and selfpreservation had found fruitful application in biological research.

The lesson of quantum physics had given a new background to such discussions. It suggested that the objective description of biological phenomena reflected different approaches in physiology and modern biochemistry. The basis for the complementary mode of description in biology was concerned with the practically inexhaustible complexity of the organism. So long as the word "life" was retained for practical

or epistemological reasons, the dual approach in biology would persist.

Psychology took one into a new domain of knowledge in which the language used to communicate states of mind was different indeed from that usually employed in the physical sciences. The close relationship between psychical experiences and physical and chemical processes in the body was evidenced not least by the application of medicaments in mental disease. The irreversible character of the physiologiprocesses concerned was also clearly reflected.

Summarising his address, the speaker said he had tried to show how researches into the world of atoms had offered new opportunities of tracing the harmony in nature of which Orsted had spoken, but which should rather be thought of as the unity of human knowledge. Only the appreciation of such harmony or unity could promote a balanced attitude and avoid confusion. The programme of the congress bore witness to the fact that pharmaceutical and pharmacological science represented an integral part of the in-quiry into the wonders of nature.

The proceedings ended with an important event in Federation history: The simultaneous presentation of two gold medals. They were presented by the Federation president after Dr. Ruyssen had outlined the important contributions to pharmaceutical science which had been made by each of the recipients: Dr. Jacob Buchi, Switzerland, and Professor Aa. Schou, Den-

mark.

Trade Names and "Free" Names INDUSTRIAL PHARMACISTS' SECTION

A PUBLIC session called by the section of industrial pharmacists on August 30 considered a report, pre-C. C. Stevens, Great Britain, on "Trade Marks and Free Names for Medicinal Substances."

The report pointed out that free or

approved names were created by a number of national and international bodies for medicinal substances, pestcontrol agents and plants; the proce-

dure was also followed in spheres outside medicine and pharmacy. Government and semi-official committees in several countries were promoting the adoption of free (approved, generic or non-proprietary) names and published them with a recommendation for their general use. There were also internageneral use. There were also interna-tional organisations pursuing the same aims. The World Health Organisation in 1953 issued a list of guiding principles to be followed in the choice and general adoption of "international non-proprietary names" ("dénominations communes internationales D.C.I.'s) and was the obvious means in pharmacy for the co-ordination and issuing of recognised free names. It would be an advantage if W.H.O. were the only official body to issue such names. The reasons usually given for creating and uniformly adopting international common names were:

(i) To reduce what might be an excessive

number of different scientific designations for one and the same active substance.

(ii) To avoid practical difficulties resulting from use of scientific designations that were often very long.

At national and international level the introduction and general use of common or free names had received constant support from pharmacopæia commissions, the I.P.F., etc., but also to a certain extent from the medical profession, hospitals, etc. As a result. the practice of using free names in scientific literature had grown by leaps

and bounds in the past few years.

The protection and use of trade marks was important to all sections of the community, because trade marks, while identifying products, served more importantly to differentiate between products of different manufacturers and could guarantee quality. That value should be safeguarded. The question must be examined whether the widespread adoption of free names for active medical substances would not undermine trade mark rights. That might well be possible since the popularising of free names appeared to lead gradually to replacing trade marks by free names.

The position was fundamentally different with free names. Unlike trade marks they were not devised to indicate the origin and quality of a prea substance by providing for a short name instead of the usually long scientific designation or chemical formula. The active substance con-tained in a drug and described by a free name might in some cases be identical with pharmaceutical products of different origin manufactured under widely different conditions of quality control. Features, such as excipients, flavouring, rate of disintegration, etc., might also substantially differ. Substitution was often based on the erroneous belief that products containing substances designated by the same free name had identical physical and chemical properties, irrespective of their origin. With some products many years elapsed before quality was officially controlled. During that period not only could the imitator use the free name for an inferior article but he might well bring a worth-while discovery into disrepute. If the chemical name were used for a reasonable period it would be obvious to all concerned what was the identity of the drug. That was not so with an "approved" or coined name, which might not be well known, or which might take different forms in different countries.

To suppress the trade mark might only favour the work of product imitators, giving them an unfair advantage.

It is completely out of place to think that the pharmaceutical world is faced with the question whether to use trade marks or D.C.I.s. These two kinds of designation serve entirely different purposes and the pharmaceutical world needs both; D.C.I.s do not and cannot replace trade marks; they may in appropriate cases replace the full systematic chemical designation of a substance. Thus, trade marks are necessary for the designation of pharmaceutical specialities and D.C.I.s are useful for the naming of active substances contained in a preparation, where the chemical name for the active substance is impracticably long and where the D.C.I. has been closely established by the appropriate international authority.

Attitude of Section

It is only right and opportune that industry be given the right to voice its opinion and to raise objections where these are of substance. The fact that in many countries the pharmaceutical industry has helped in establishing the guiding principles laid down by the W.H.O. is to be ascribed to the very endeavour of securing to those who are doing extensive research work the right to air their views and make

suggestions.

When participating in the christening of medical substances, the industry should in particular see that the coined free or non-proprietary names remain suitable designations of the active substances, and do not take over the function of trade marks, a function for which they are neither destined nor suited. According to the W.H.O. sys-tem, free names should be formed by a contraction of the scientific designation of the medicinal substance involved, and primary consideration should be given to the suggestions of those persons who discovered the relevant substance or were the first to manufacture it and launch it on the market. This principle is sound; it gives the reput-able pharmaceutical companies or other research bodies, from which new medicinal substances originate and who best know their properties, an opportunity to assist in the selection of

acceptable free names.

It cannot be too strongly emphasised that it is unnecessary and in fact unreasonable to coin a free name for each new active pharmaceutical sub-stance before it has been established that the substance is of importance and will actually be used to a large extent in medical practice. Indeed, no useful purpose would be served by coining numerous free names which will not be used in practice to any worthwhile extent. Many new products have a short life and are soon forgotten and it would be good practice if no free name were allocated to a pharmaceutical product until after it has been on sale for a reasonable period.

The rules of procedure should be drawn in such a way as to prevent the acceptance of free names which are identical with already existing trade marks or very similar to them. Such names might easily destroy or compromise the distinctive character of trade marks. The W.H.O. is of the trade marks. The W.H.O. is of the opinion that international free names should be short. In this respect it must be observed that it is evident that the danger of conflict with trade marks increases when a free name is particularly short, as well as conflict among the free names themselves." Till now W.H.O. had had no effective means of ascertaining whether a given free name conflicted with existing trade marks, but the system contained a safeguard by providing that any interested person might raise objections to a proposed free name during the months after publication and so long as such objections had not been voluntarily withdrawn, the W.H.O. would not recommend the universal adoption of the name as an "international non-proprietary name." That provision was reasonable and deserved full approval.

All parties concerned should also co-operate in order to ward off the danger of "piracy." Such cases had already occurred in certain countries where free or nearly identical names had been registered as trade marks by local manufacturers. By that practice, the very ends which the advocates of free names had set themselves might

be defeated.

Recommendations

The section's report ended by making the following proposals:

1. It is desirable that W.H.O. should be the only official body for approving and issuing coined free names to be applied to drugs. National associations and associates should co-operate with the W.H.O. for that purpose, and W.H.O. should be responsible for maintaining close contact with the International Bureau for the Protection of Industrial Property in Berne.

2. W.H.O. should apply the procedure approved by resolution of the World Assembly of Health, particularly as concerns the following points:

(a) Confine the creation and use of free names to those cases where a new active chemical substance has been on sale for a reasonable time and has proved its worth in practice through widespread medical application.

(b) Accept, where possible, on an international basis, free names suggested by the inventors or original manufacturers and ensure that those names remain the accepted free designations of the active chemical substances contained in medicaments.

(c) Prevent the adoption of free names. that are confusingly similar to existing

trade marks.

3. Ensure that no government should accept the registration as a trade mark of any name published as a free name by the International Pharmacopæia or any national pharmacopæia.

4. Counteract the dangerous tendency of replacing trade marks by free names, and of dislodging trade marks in the important rôle they play in an economic

system of free competition.

Discussion

The procedure for arriving at international common names was stated by MR. PAUL BLANC (secretary to the International Pharmacopæia Authority) to have been re-examined on a number of occasions, but no better one had been found. Naming difficulties were usually overcome, and nowadays there were not often objections.

The viewpoint of the British Pharmacopæia Commission was put by PROFESSOR K. BULLOCK, the secretary (Mr. T. C. Denston) being at another sectional meeting. He said the Commission liked approved names to be fixed early and if possible before a product was put on the market. There: was often difficulty at arriving at a single world name because of national differences in chemical nomenclature.

MR. R. MORICE, France, declared that it was not necessary for a product to have a generic name before being launched commercially. At that stage it was identified to the manufacturer by a research number. Professor Bullock gave as the reason for the Commis-sion's demand that it enabled some sort of standardisation for purity. Heagreed there was no other need for a free name until the product was marketed.

A delay of two years, said Professor Schulz, Berlin, Germany, was necessary to assess the worth of a new product. The multiplication of names for products that did not last would make difficulties. The generic name should be given as a mark of esteem for a successful product.

Congress Items

In recognition of the work of the International Pharmaceutical Federa-tion, Spanish pharmacists have presented to its president (Sir Hugh Linstead) two medals, both of which he wore for the first time at the Congress banquet on August 30.

THE Swedish Government has awarded a medal of merit to Dr. Reusse (president of the section of military pharmacists, International pharmacists, International Pharmaceutical Federation) for his services to military pharmacy. The medal was presented to him by the Swedish Surgeon-General at Malmö on August 31.

NEW PRODUCTS AND PACKS

Anti-spasmodic and Sedative Tablet.—A. H. Robins Co., Ltd., 5 Fenchurch Street, London, E.C.3, are introducing Donnazyme, described as a new antispasmodic-sedative-digestive. Donnazyme is a combination of their already accepted formulation of Donnatal with bile salts and is supplied in bottles of fifty and 500 tablets.

An Aldosterone Preparation.—CIBA Laboratories, Ltd., Horsham, Sussex, have introduced Aldocorten, indicated in replacement therapy in cases of adrenocortical insufficiency. Given by injection, Aldocorten is claimed to exert a potent effect on electrolyte metabolism, conserving sodium and promoting potassium excretion. Each ampoule contains 0·5 mgm. aldosterone (dextro-11β, 18-epoxy-18, 21, dihydroxypregn-4-ene-3, 20-dione). Aldocorten is packed in box of six ampoules.

Cough Linctus. — Genatosan, Ltd., Loughborough, Leics, announce the introduction of a cough linctus each teaspoonful of which contains 40 mgm. of dimethyl-amino-isopropyl-phenylvaleronitrile citrate, formulated in a pleasantly flavoured cherry-coloured linctus base. Supplied under the trade name of Dimyril, the linctus is recommended for use in various bronchitic conditions, smoker's cough and the symptomatic suppression of cough associated with disorders of the respiratory tract. Packs are bottles of 2 and 4 fl. oz.

Product and Pack Improved.—Advantages for both retailer and customer are provided in a redesigned pack for Energen starch-reduced rolls, makers of which are Energen Foods Co., Ltd., London, N.W.10. The flavour of the rolls has been improved and the new carton is handier for the user and has greater shelf-appeal. Styled by Richard Lonsdale Hands Associates in primrose yellow and two shades of blue, the carton is made of odourless board in which the rolls are maintained in first-class condition. The carton takes up less shelf space than the previous popular size, and the new transit case, taking 2 doz. new packs, is opened by a tear-tape into separate dozens for convenience in warehousing and distribution.

Product Changes.—The Crookes Laboratories, Ltd., Park Royal, London, N.W.10, announce that Crookes B-Complex elixir has been discontinued since September 1, and its place taken by a reformulated product issued under the trade name Becomel. The new preparation contains vitamins B₁, B₂, B₆ and nicotinamide, is pleasantly flavoured, and has a higher degree of acceptability, especially for children. The packs are bottles of 4, 8 and 80 fl. oz. Also on September 1 the strength of Dermasulf was increased from 3.5 per cent, to 5 per cent, (increasing the content of elemental sulphur to 2.5 per cent.), without change of packs and prices. Crookes' Lacto-Calamine talcum powder is now being issued in a plastic puffer-bottle of modern design.

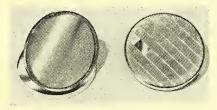
Soft Toilet Tissue.—The Velvet Crepe Paper Co., Ltd., Woodside End, Alperton, Middlesex, are offering Velvet "double soft" toilet rolls in 2-ply paper in white, pink, blue or primrose colours.

Lightweight Packs.—Coty (England), Ltd., Coty House, 3 Stratford Place, London, W.1, draw attention to their new lightweight packs which are ideal for journeys where it is necessary to carry a restricted amount of luggage. Each container weighs \(\frac{1}{2} \) to 1 oz. and it is possible to carry a cleanser, nourishing cream and freshener with under 13 oz. total weight of beauty needs.

Additional Packs.—A new four-tablet pack of Cephos has been produced by BEECHAM PHARMACEUTICALS, LTD., St. Helens, Lancs, and is intended to replace the two-tablet pack. It is available in a 48-envelope display outer only, replacing the former 60 and 120 envelope sizes. — PHILLIPS, SCOTT & TURNER, LTD., 179 Acton Vale, London, W.3, are making available a larger size of Coldrex, containing twenty-four tablets.

Emollient and Antiseptic. — A new skin cream issued by Jane Seymour, 162 New Bond Street, London, W.1, under the name "Wonder Cream" contains lanolin, cholesterol and hexachlorophene. It is pleasantly perfumed, is easily applied, and is readily absorbed. "Wonder Cream," which may be used as a nourishing or foundation cream or for sore and chapped skin, is issued in tubes of two sizes. It may also be used on children's cuts and grazes.

"Double-mirror" Accessory. — Into their centenary range of compacts and accessories Laughton & Sons, Ltd., Birmingham, 14, have introduced the Stratton "double-mirror," No. 137/ET.



When closed the mirror folds flat to present an attractive engine-turned case, but when opened it can, by ingenious strutting, be stood or hung in a variety of ways to present either a magnifying or a plain mirror. It makes a useful travelling companion and a pleasing gift.

Taken Instead of Meals.—Metercal, a newly launched speciality of Mead, Johnson, Ltd., 10 Upper Grosvenor Street, London, W.1, represents "a revolutionary new dietary concept in weight control," namely a complete food taken instead of meals. Presented as a powder, Metercal mixes easily with water to make a sustaining drink, providing a 900-calorie daily diet. Metercal is being introduced in the United Kingdom exclusively through chemists. It becomes available within the next few weeks, and is being made known by advertisements in national dailies and weeklies and on television.

Eye Make-up.—Max Factor Hollywood and London (Sales), Ltd., 16 Old Bond Street, London, W.1, announce the availability from mid-September of

two new products, eye cream "Plus," a cream to nourish the delicate skin around the eyes, and eye make-up remover pads, containing oils to remove every trace of eye make-up and claimed to leave lashes silky soft. Messrs. Max Factor also state that they are introducing a selection of new eye make-up colours and accessories, designed and presented to synchronise with the season's new fashion colours. The items are mascara wand, in a brushed gold case, Hi-Fi eye shadow stick, in a goldtoned lipstick-type container with swivel action, Hi-Fi fluid eye liner, in a goldtopped bottle, fine line automatic eye pencil in brushed gold case with soft fine crayon and eye-liner brush, in hygienic acetate container.



TRADE NOTES

Scottish Representation. — Vacco, Ltd. announce that, from September 1, their vacuum flask sales and representation throughout Scotland are being handled by A. Caldwell Young & Son, 200 St. Vincent Street, Glasgow, C.2 (telephone: Central 4915).

Change in Distribution.—Beecham Pharmaceuticals, Ltd., St. Helens, Lancs, took over the distribution of Formula 21 in the United Kingdom from September 5. The company state that a heavy television campaign is due to start during September. Details of new prices for the company's range of products appear elsewhere in this issue.

Large-size Polythene Sheet.—A giant size dust sheet, measuring 12 x 9 ft. has been added to the Max polythene range produced by Mondart, Ltd., 49 Park Lane, London, W.1. The large and extra-strong sheet is designed particularly to meet the demand for a waterproof covering large enough to protect goods which have to be stored outside. It can also be sold for inside work as, for instance, for saving carpets and furniture from paint splashes when the home is being re-decorated.

Supplies Unaffected by Fire.—A fire broke out in the fatty alcohol distillation department at Marchon Products, Ltd., Whitehaven, Cumberland, on September 5, as a result of which distillation equipment was damaged. Although it is estimated that the fatty alcohol distillation will be out of action for three weeks, stocks are such that the company foresee no difficulty in maintaining normal supplies to the trade over the period. There were no injuries caused by the fire.

COMPANY NEWS

Previous year's figures in parentheses

EVANS MEDICAL, LTD. — The company has acquired for cash the whole of the share capital of J. Gilbert Jackson, Ltd., wholesale chemists, Sheffield. For the time being the company will continue to trade under the name J. Gilbert Jackson, Ltd., 56 Ellin Street, Sheffield. Mr. W. R. B. Sheldon has been appointed managing director.

F. W. BERK & CO., LTD.—Subject to audit, consolidated profits after all charges, but before taxation and capital issue expenses, for the six months ended June 30, amount to £367,653 (against £291,998 for the same period of 1959). The board states that because of seasonal factors the first half of the company's trading year usually produces a higher profit than the second half. Turnover was £4,509,000 (£8,344,100 for the whole of last year). No dividend has yet been received from the company's investment earlier this year in Spencer Chapman & Messel, Ltd., and it is probable that no income will arise from this source until 1961 but that company was earning profits in accord with those forecast at the time the investment was made. An interim dividend in respect of the current year is declared at the rate of 2¹/₄d, per Ordinary share on the capital as increased to £1,800,000 by a two-for-five rights issue earlier this year.

SMITH & NEPHEW ASSOCIATED COMPANIES, LTD.—The company is initiating interim dividends with a payment of 2 2/5d, per 4s, share in respect of 1960, but the directors make it clear that it should not indicate that the total will exceed that of 1959 (equivalent to $5\frac{2}{3}$ d, per share adjusting for the 50 per cent. scrip issue). Group profit for the first twenty-four weeks of 1960 increased sharply to £1,186,000 (against £1,063,000 for the comparable period of 1959). Sales have continued to maintain the advance on last year and show an increase over the 1959 period of 9 per cent., state the directors. The profit is 10 per cent. up, a better result than was anticipated in the last report, the directors add. Greater activity and economies in material and labour in the factories should assist in offsetting some of the higher operating costs. The modernisation of plant and equipment continues.

Details are given of the proposed setting up of a manufacturing unit in New Zealand; \pounds_2^1 million has been set aside for the project. An agreement has been reached with a Belgian company to expand the group's activities in Belgium. This can be regarded as the first step for the group's development in Europe, state the directors.

New Companies

P.C .= Private Company; R.O .= Registered Office

L. J. ROSENBERG (CHEMIST), LTD. (P.C.).—Capital £100. Directors: Leonard J. Rosenberg, M.P.S., and Susanna Sternfeld, M.P.S. R.O.: 25 London Road, Southend.

WRIGHT LAYMAN & UMNEY (SALES), LTD. — Subscribers: R. Aylmer Hall and H. W. A. Speller. [Corrected note.]

BUSINESS CHANGES

MR. M. P. KARMY, M.P.S., 186 Snargate Street, Dover, has opened a pharmacy at 3 King Street, Dover.

MR. DOUGLAS J. CRAWFORD, M.P.S., has closed his pharmacy at 66 Hurst Street, Birmingham, 5 and has taken over the pharmacy of R. A. Roper, Ltd., 9 High Street, Dunmow, Essex.

RICHARD BAKER & CO., LTD., are removing their offices to 12 Broadway, London, S.W.1 (telephone: Abbey 3221) on September 19. The address will also be the headquarters of W. Harrison & Co., Ltd.

THE business of Mr. A. B. Sherren, M.P.S., 20 Bywood Avenue, Shirley, Croydon, has been acquired by Mr. H. R. Gilby, M.P.S., until recently sales representative for The British Drug Houses, Ltd., in South-east London. Mr. Gilby will be trading as H. R. Gilby (Chemists), Ltd., as from September 29.

MR. HAROLD THOMPSON, M.P.S., F.B.O.A., Snow Hill Pharmacy, Wolverhampton, because of demolition in the area, is transferring his business to two addresses on October 1: 14 Upper Green. Tettenhall, and Finchfield Road West, Finchfield, Wolverhampton. Correspondence to the Tettenhall address.

MARRIAGES

GANDERTON—BIRCH. — At St. John's Church, Newland, Hull, on September 3, David Ganderton, B.Pharm., 207 Fullingdale Road, Northampton, to Joyce P. L. Birch, M.P.S., 31 Hall Road, Hull.

JAQUES — RAYNOR. — At St. Mary's Church, West Derby, Liverpool, on August 6, Brian Jaques, B.Pharm., Orchard Street, Balby, Doncaster, to June Raynor, West Derby. Mr. Jaques was recently appointed assistant lecturer in pharmaceutics at the School of Pharmacy, London University.

Silver Wedding

BOOTH—BELL.—At St. Werburgh's Church, Chorlton-cum-Hardy, Manchester, on September 10, 1935, John Stanley Booth, M.P.S., to Catherine Beck Bell, M.P.S. Present address: 7 Kingsley Road, Allestree, Derby.

DEATHS

DEAKIN.—On August 28, Mr. Walter Woodyatt Deakin, M.P.S., Craglands, Creswell Road, Clowne, Chesterfield, Derbys, aged eighty-two. Mr. Deakin was a member of Derbyshire Executive Council for a number of years

DOUGLAS.—Suddenly on August 26, 1960, Mr. Thomas Leslie Douglas, M.P.S.N.I., 36 Rosemary Park, Belfast, 9. Mr. Douglas qualified in June, 1939, and had carried on business for some years at 14 Donegall Road, Belfast, 12.

HENRY.—Recently, as the result of an accident, Mr. Alexander McLaren Henry, M.P.S., 235 Croftpark Avenue, Glasgow, S.4. Mr. Henry qualified in 1907.

HICKSON.—On August 15, Mr. John Alfred Hickson, M.P.S., 20 Kensington

Road, Winshill, Burton-on-Trent, Staffs-Mr. Hickson qualified in 1902.

SMITH. — At Ringmer, Sussex, on September 1, Mr. Horatio Nelson Smith,

president of Smith & Nephew Associated Companies, Ltd., aged eighty-six. Mr. Smith was the original partner Mr. T. J. Smith, the Hull manufacturing chemist who, with his nephew, established Smith Nephew. In an active working



life that continued until a few weeks before his death he travelled the world widely, initiating and establishing markets for his group's products that resulted in Smith & Nephew companies being established in South Africa, New Zealand, Canada, Australia, India and Eire. Many of the products now made by the group were introduced to Britain as the result of his travels. A generous supporter of charitable institutions, particularly hospitals, Mr. Smith was closely associated with Dr. Albert Schweitzer's hospital in Swaziland, and missionary and leper hospitals in Africa, Korea and India. As an exam-ple of his generosity he established the Newby Trust as a personal foundation to help men and women throughout the country who are in need. He was the president, later patron, of the Yorkshire Table Tennis Association for many years.

STEAD.—On September 1, as the result of a motoring accident, Mr. John Garry Stead, M.P.S., 52 Southgate, Elland, Yorks, aged twenty-six.

PERSONALITIES

MR. J. G. DARE, Ph.D., F.P.S.. Leeds, has been appointed Reader and Dean of the Department of Pharmacy, University of Queensland, Australia. The Department is a completely new one in the University and the students are being admitted to a course leading to the Bachelor of Pharmacy degree of the University. Dr. Dare takes up his duties in mid-November.

MR. J. SHARP, F.P.S., 5 Compton Street, Carlisle, who is eighty-two years of age, has just retired from his business in Scotch Street after sixty-six years in pharmacy. A native of Port Carlisle, he served his apprenticeship with the late Mr. Henry Sawyer, Green Market, Carlisle. After qualifying, he gained experience in Brighton and the West End of London, returning to Carlisle to purchase the business from which he has now retired. Since the beginning of the National Health Service he served as a member of the local Executive Council (a post he has now relinquished). Mr. Sharp is a former chairman of the local branch of the Pharmaceutical Society and also of the National Pharmaceutical Union branch, and a past-chairman and past-secretary of the Pharmaceutical Committee.



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TELEGRAMS: "CHEMICUS ESTRAND, LONDON"
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Right Sentiments, Wrong Platform

WITH many of the points made by Professor Linnell in his address to the British Pharmaceutical Conference (p. 314) we must all agree. More money should be spent on research. More scientists should be trained to make use of the money spent. More effort should be put into persuading the public of the need for research. Those are all admirable sentiments. But were they being addressed to the right audience?

If the professor's object was to convert the unbeliever, was he not preaching to the converted? If to get a message home to the captains of industry or the heads of government, were they present in such numbers as to make the exercise worth while? If to influence mass thought, is public opinion on a non-pharmaceutical subject formed by what is said at a pharmaceutical conference?

The British Pharmaceutical Conference began its career under the protective shelter of the annual meetings of the British Association, from whose platform the Conference chairman's address would perhaps have more appropriately come. But the need for a more specific, if more limited, forum led to the Conference developing along its own lines, and the fact that it is now holding its ninety-seventh annual meeting seems to confirm that need. At this mature stage a Conference chairman should be proof against hankering after a return to the womb. Equally he should guard against usurping the functions proper to the chairman of that polyscientific body.

The pity about Professor Linnell's choice of subject is twofold. On the one hand he appears to us to be wasting his sweetness on the desert air. On the other he is denying Conference members the benefit of his knowledge and experience in a field in which he is an acknowledged authority. There is so much that waits to be said on aspects of chemistry—especially at a turn of events at which "medicinal" chemistry is tending to emerge as a specialised subject—which Conference members would be receptive and even eager to hear, especially from an expert of the calibre of Professor Linnell.

DR. A. H. BECKETT, in thanking the Conference chairman for his address, applauded Professor Linnell for having "resisted the temptation" to speak on a research subject, and for having chosen instead a "really important" subject. Such a view of priorities in a pharmaceutical conference we find difficult to understand and impossible to share.

One aspect of advantage we do admit. The address was more readily understood than most by those Conference members—and ladies—who, not primarily interested in the science side, were present at the opening session.

We admit, too, the greater publicity accorded by the national Press to the chairman's remarks than has been the experience in previous years, but there are indications (in the report published in *The Times*, for example) that that has been due less to the content of the address than to the efforts of the Conference Press Officer (Mr. W. K. Fitch) to awaken the interest of the dailies in the British Pharmaceutical Conference by inviting them, a week or two before it opened, to meet the chairman and other Conference figures and learn from them what it was all about. The success of that Press conference should encourage the authorities to make it a usual pre-Conference event.

Flood Warning

THE metric system for dosages of all tablets, capsules and injections has been decreed for the 1963 Pharmacopæia. That is but three years hence and it is known that the intention is to switch fully to metric as soon as practicable . . . yet little indeed has been done to get down to the immense practical problems involved. Too many have been airily assuming that everything will be "all right on the night." The Pharmacopæia Commission has proposed that the Codex and Formulary should be brought into line simultaneously, as though it were merely a matter of "metrifying" the apothecaries' quantities in the formulas, as if that would leave pharmacists with quantities they could work to or even measure out. The manufacturers seem to think that present bottles of 8-oz. and similar capacities can be made to do if, say, fifteen doses are prescribed where sixteen were previously ordered, even if that means a bottle with a space above the mixture. The doctors would probably be content -unless compelled to do otherwise—to go on prescribing as they do now, leaving pharmacists to calculate conversions and produce something resembling what the product would have been in apothecaries' measure. Worst of all, pharmacists have not thought about their difficulties in explaining away the different sizes of metric tablets, etc., from what their customers have become accustomed to, to cite only one situation that will confront them. Certain legal aspects, it will be noted from p. 295, have been thought of by the Pharmacopæia Commission.

In making them face squarely what is involved, Dr. Capper (see p. 316) has shown both imagination and courage—the imagination of one who has projected himself into the doctor's surgery, the pharmacist's dispensary and the patient's sickroom in a future that sees the apothecaries' system robbed of its authorised status but no adjustment, or not enough adjustment, to the new system; the courage of a Noah facing the derision even of his family in order to save them from perils to which they are blind but which he sees all too clearly. The very tenor of the discussions at Newcastle proves him right, if not in all his conclusions, at least to make known his anxieties. All must think about the matters he has raised or there will be chaos at the change-over, and of all those affected the pharmacist is most likely to suffer, though there is still time to make his own position secure and the whole situation sane.

TRIALS ON A NEW PENICILLIN

Success against resistant staphylococci

SIDE-CHAIN derivative of the basic penicillin molecule (6-aminopenicillanic acid) prepared during 1959 at Beecham Research Laboratories, Ltd., was found active against hitherto penicillin-resistant strains of staphylococcus. It was subjected to bacteriological and clinical trials, the results of which were presented as seven papers published in the British Medical Journal (September 3). The trials were undertaken with the co-operation of medical staff of children's and teaching hospitals, and at laboratories of Messrs. Beecham and the Medical Research Council. They were concerned with determining the antibiotic's range of activity in vitro and in vivo; its reaction to penicillinase (the "neutralising" enzyme produced by resistant bacteria); minimum bactericidal and bacteriostatic serum concentrations; stability and absorption (and hence an effective route of administration); rate of excretion, and toxicity.

Range of Activity

In vitro tests were performed to determine the superiority of the antibiotic-named BRL 1241* by the manufacturer -over its synthetic predecessor phenoxypropionamidopenicillin (Broxil) and the "natural" fermentation-products phenoxymethylpenicillin (penicillin V) and benzylpenicillin (penicillin G). It was found that BRL 1241 actually enhanced penicillinase production by "resistant" strains of staphylococcus but, unlike other penicillins, it was not appreciably destroyed by the enzyme. (Experiments were still proceeding to determine whether BRL 1241 would induce penicillinase production by bacteria that were sensitive to penicillin G, so conferring "resistance' them.) The antibiotic was consequently successful in inhibiting growth of all strains of staphylococcus. By comparison, Broxil gave poor results against "resistant" strains, and the natural penicillins none at all. All four antibiotics were effective against "sensitive" staphylococci, group A streptococci and pneumococci. However, penicillin G was bactericidal in far higher dilutions than the other penicillins. Furthermore, Gram-negative organisms killed by the natural penicillins often survived inoculation with BRL 1241. Those preliminary findings indicated that BRL 1241 had a narrower spectrum of activity than penicillins in current use; but an ability to remain antibiotic in the presence of penicillinase could prove invaluable in combating hospital cross-infections, currently becoming an increasing cause for concern. (A 1945 hospital survey had shown 80 per cent, of sample staphylococci to be sensitive to penicillin G. During the ensuing fifteen years, continuous use of that antibiotic had resulted in progressive elimination of sensitive organisms. Inevitably, penicillinase-producing bacteria had gradually assumed the rôle of primary infecting agents, until in 1960 they comprised over fourfifths of hospital pathogenic staphylococci.) The potentiality of BRL 1241 in that respect was tested at the Bland-Sutton Institute of Pathology, Middlesex Hospital, by comparing antibiotic activity with that of penicillin G against 1,118 samples of pathogenic staphylococci isolated from patients and staff of the hospital. All samples proved sensitive to BRL 1241, whereas only 18 per cent, were sensitive to penicillin G.

The results encouraged the investigators to extend the trial to in vivo assessment of BRL 1241. In vitro tests had shown that the antibiotic was unaffected by blood, and that the minimum bactericidal concentration varied between 2.5 and 5 microgm, per mil, BRL 1241 was unfortunately decomposed by acids, and solutions were unstable unless refrigerator-stored. It was therefore solubilised immediately prior to injection, and administered intramuscularly to patients resistant to penicillin G. Samples of blood and urine were examined at frequent intervals for their anti-

biotic content, and viable bacterial counts were made from the blood samples. The patients were also observed for development of toxic or allergic symptoms. It was found that adequate blood levels of BRL 1241 were rapidly achieved in the plasma and were retained for about four hours. About 70 per cent. of the antibiotic was excreted unchanged in the urine within twelve hours, and it was thought that the remainder was probably excreted via the bile. The antibiotic inhibited bacterial growth at all sites of infection with the exception of the external nares. (It was suggested that a locally acting agent such as neomycin or chlorhexidine should therefore be applied to the nostrils of nasal carriers of infection.) No evidence of systemic toxicity was apparent, even after a thirty days' course. However, local reactions did occur, due to the necessarily frequent (four-hourly) injections; discomfort at injectionsites was also reported. (The effectiveness of a single massive dose might be investigated to advantage.) Allergy to penicillin G was found to apply to BRL 1241 also. (A patient given a dose of BRL 1241 developed an erythematous rash that was subsequently controlled by large doses of antihistamines.) The optimum adult dose was found to be 1 gm. every four hours; children responded equally well to daily doses of 100 mgm. per kilo body weight, given in divided doses,

It was concluded that there was considerable justification for the immediate extended use of BRL 1241 in severe infections due to penicillin-resistant strains of staphylococcus. The antibiotic was bactericidal as well as bacteriostatic, and was non-toxic to the eighth cranial nerve. Furthermore, in marked contrast with other antibiotics effective against penicillinase-producing staphylococci, BRL 1241 had not so far encouraged the development of resistant strains.

* Sodium 6-(2,6 dimethoxybenzamido) penicillanate monohydrate, marketed as Celbenin.

Onward from Galen

A CURRENT CAUSERIE

"No rooms at Sheffield's inns" was the title of a recent article in the Sheffield Telegraph which expressed disappointment at the British Pharmaceutical Conference's choice of a rival Northern centre for its proceedings. "Last time the conference was held in Sheffield was in 1904, before that in 1897," [the latter date should have read 1879, in 1897 the Conference was in Glasgow], the article read. Envisaging next year's inevitable swoop southwards, the newspaper's London correspondent had set out to clarify the situation once and for all. On being asked "Why not come to Sheffield?" a Pharmaceutical Society official had replied "We need accommodation for at least 300 people in good-class hotels, and Sheffield cannot provide that number of rooms." The newspaper pointed out that the passing of time since 1904 had brought-in addition to expanding conferences—motor cars. And went on "When you consider the number of hotels conveniently near Sheffield-in Buxton, for instance-it is just moonshine to say that the British Pharmaceutical Society cannot hold its conference here until at least one more good hotel is built in the city. Of course we need that hotel, but I hope some of the Sheffield delegates will tell the Society's officials that the annual conference could be held here without any difficulty or inconvenience. And with much profit and pleasure to the delegates and their wives." The Yorkshire contingent at the 1960 Conference have indeed a strong case for pressing their claim to be future hosts, for Harrogate was the last Yorkshire venue, nine years ago. Local pride is a healthy attribute.

SQUARE FEET AND HUMAN FEET

A basis for assessing site value

OT long ago a man in estate agency in London was asked if he had much to do with the sale and letting of shop premises. He said that it was his principal work. "Do you count the pedestrian flow?" "No," he replied. "I have had a lot of experience and I have a pretty good idea what any place is worth."

But what about the shopkeeper who has not had a lot of experience in estate agency work? When he looks at shop premises, he will ask about sq. ft. (and, if he has much stock to carry, cu. ft. as well). The condition of the

premises is also important.

Yet, even if all those matters are satisfactory the shop-keeper will still fail to make an adequate living unless there are enough pairs of human feet in the street outside. To those, and to those only, can he look for custom, unless he has the glamour of a film star, or some unusual commercial magnetism that will bring determined shoppers to

his shop wherever it is.

When a trader takes a shop it is the pedestrian flow that he chiefly wants. Why then does he not count the flow, or have it counted? When he buys or sells merchandise, he usually does so by weight, volume, length, or number. If he does not sell a pig in a poke, why should he buy a shop in a poke? It might even be an eye-opener to many cstablished shopkeepers to make such a count, and encourage them to consider if they are getting their share of the available trade. A statement that a shop is in a "busy street," or in the "heart of a shopping centre," or in a "densely populated district," has no exact meaning. Just how "busy" is the "busy street"? It could mean 1,800 people an hour: it might mean only 600 people an hour.

In the old days, would-be shopkeepers were warned by many writers of the danger of paying a high rent unless their capital was adequate. In the conditions of today, too low a rent may mean insufficient traffic; instead of conserving his capital, the trader may find that he is slowly "going bust." In some shops a substantial part of the week is spent in little more than thumb-twiddling. Apart from the monotony of that occupation, where does the economy lie, how-

ever low the rent?

An American Census

The Americans have long been keen on business analysis and even forty years ago figures were being published in the United States for pedestrian flow in business hours. It is interesting to note that they showed in the shopping centres of small towns (2,500 to 25,000 population) the flow averaged 372 an hour; in medium-sized towns (50,000 to 250,000) 1,791 an hour; and in large towns (250,000 upwards) 256 an hour in surburban locations and 3,505 an hour in town-centre locations.

Today the shopkeeper finds that, if his merchandise range and prices are right, his display inviting, and his selling efficient, he attracts a due percentage of passers-by as customers. At the outset a straight count is sufficiently instructive. How many people pass during business hours in a week? At a later stage greater detail can be obtained. How many men, how many women, and how many children?

Watch should, of course, be kept for any major use of a road otherwise than for shopping. For example, if a high proportion of the flow in a suburban thoroughfare is made up of men going to or from the railway station on their way to or from work, the site may be a good one for a tobacconist but may be less good for a family-type business.

A continuous count for all the hours of the business week is rarely necessary. A five minute sample during any hour will usually be found to give, if multiplied by twelve, a reliable figure for the whole hour. Because of "bunching" a smaller sample may be unreliable. Where a shopkeeper

is already established those counts can usually be fitted in for a whole week without much inconvenience to business. Not all the counts need be made in the same week. The intending purchaser of a business who is inspecting premises offered to him and has to look at a number, might content himself with counts on a Monday and Saturday. Between them they would give him a yardstick for comparing one shop with another. But he must always compare counts for the same days of the week and must on no account compare Monday for one shop with Friday for another. In any count it must not be assumed that all pedestrians are shoppers in the sense that they are on every occasion visiting the street for a shopping purpose. Shopping is an important part of life but not the whole of it, A street that is good for shops often leads also to many other places to cinemas, offices, a factory, bus and railway stations, schools, and to the houses of friends. How, it may be asked, can one count the number of non-shopping pedestrians in the flow?

Identifying the Shoppers

There are a number of methods of estimating the proportion of non-shoppers. One is to count the people with shopping bags. That is unreliable because many people shop without bags and, on the other hand, many people carry bags without buying anything. The best method known to the writer is to count the flow when shops are shut but other activities are continuing. The obvious period for doing that is the afternoon of early closing day. In one town with a 30,000 population and a pedestrian flow on the south side of the main shopping thoroughfare (during shopping hours) averaging 900 an hour, he found a flow averaging 250 an hour during the afternoon of early closing day. That gave a net shopping pedestrian flow of 650 an hour—quite a difference. Not only will the ratio of shoppers to non-shoppers vary from town to town, and between town centre and suburb, but it may also vary from street to street within the central shopping area of one town.

The flow will vary between one side of a street and the other, and will not necessarily be the same for all points on the same side of one street. It can vary for a number of reasons. There may be a focal point, such as a post office, which some people visit before turning back in their tracks. There may be side streets, or main-street intersections, which

feed-in or bleed-off pedestrians.

The Blank Patch

There may be a bus stop at which people are removed, or a new quota contributed that moves in one direction. Part of the flow may use a pedestrian crossing and stay on the other side, Because of the walls of municipal offices, a library, or fire-station, there may be "a blank patch," which encourages some people to cross to the greater interest of the other side even when a pedestrian crossing is not available.

Periods that are obviously not typical should be avoided. They include the week preceding Christmas and in the north of England the wakes weeks. At holiday resorts, counts will be needed in the season and outside it. As to the actual technique of counting, it will be less difficult and confusing, whether the counting is done mentally or with the aid of a press-button hand-tally counter, if the eye looks across the pedestrian stream instead of facing it.

"PHARMACEUTICAL research is costly and it can be effective only if it is planned as a long-term project lasting several years. . . I would again emphasise that if the public want to benefit from the discovery of new drugs they must expect the drug bill to rise." Professor C. A. Keele (Professor of Pharmacology, Middlesex Hospital Medical School).

GUIDE TO NEW MEDICAMENTS

Information about proprietary products supplied principally on prescription. Reprints on perforated gummed paper for affixing to index cards are obtainable from the Editor. Notes on the products are given on p. 325.

THE CHEMIST AND DRUGGIST Guide to New Medicaments, September 10, 1960

GESTANIN

Manufacturer: Organon Laboratories, Ltd., Brettenham House, Lancaster Place, London, W.C.2.

DESCRIPTION: Tablets, each containing 5 mgm. of Gestanin (allylestrenol). The tablets are white and scored.

INDICATIONS: Functional uterine bleeding; premenstrual tension; habitual abortion; threatened abortion.

Dosage: Two to four tablets daily, depending on the condition under treatment.

How Supplied: In bottles of thirty and 100.

First Issued: August 1960.

THE CHEMIST AND DRUGGIST Guide to New Medicaments, September 10, 1960

BIOCORTAR

Manufacturer: Armour Pharmaceutical Co., Ltd., Hampden Park, Eastbourne, Sussex.

Description: Capsules for nasal or oral inhalation, each containing 15 mgm. of hydrocortisone acetate and 85 mgm. of lactose; for use in the Armour insufflator.

INDICATIONS: Hay-fever and bronchial asthma.

METHOD OF Use: Hay-fever: contents of one capsule to be blown into the nostrils, in three divided doses a day.

Bronchial asthma: half a capsule by oral inhalation twice daily; in severe cases it may be necessary to use one capsule three times daily for 5-7 days initially.

How Supplied: In the Biocortar set (six capsules and insufflator), tubes of six, and bottles of twenty-five and 100.

FIRST ISSUED: April 1960. (Introduced July 1956 as hydrocortisone acetate snuff capsules.)

SUPPLY RESTRICTIONS: Therapeutic Substances Act.

THE CHEMIST AND DRUGGIST Guide to New Medicaments, September 10, 1960

SOFRAMYCIN oral tablets

Manufacturer: Roussel Laboratories, Ltd., 843-47 Harrow Road, London, N.W.10.

DESCRIPTION: Tablets, each containing 250 mgm. of Soframycin (framycetin sulphate), a bactericidal antibiotic used for local treatment. The tablets are white and unmarked.

INDICATIONS: Pre-operative and post-operative intestinal antisepsis; diarrhoea of bacterial origin.

Dosage: Intestinal sterilisation: For pre-operative preparation, up to sixteen tablets (4 gm.) daily in divided doses for 2-3 days; alternatively for pre-operative preparation and post-operative therapy, six tablets (1.5 gm.) daily in divided doses for 4-8 days. The tablets may be swallowed whole or crushed in half a glassful of water.

Diarrhoea of bacterial origin: Adults—four to six tablets (1.0-1.5 gm.) daily; Children—half to one tablet (125-250 mgm.) daily; treatment is usually for 5-8 days. The tablets should be crushed before swallowing.

No course of treatment should exceed 10 days.

How Supplied: In bottles of twenty.

FIRST ISSUED: July 1960.

THE CHEMIST AND DRUGGIST Guide to New Medicaments, September 10, 1960

DOLOXENE COMPOUND Pulvules

Manufacturer: Eli Lilly & Co., Ltd., Basingstoke, Hants.

Description: Capsules, each containing 32 mgm. of Doloxene (dextro-propoxyphene hydrochloride); 162 mgm. (gr. 2½) of phenacetin; 227 mgm. (gr. 3½) of aspirin; and 32·4 mgm. (gr. ½) of caffeine. The capsules are opaque pink/light grey in colour.

INDICATIONS: Pain associated with arthritis and rheumatism, serious febrile conditions, severe dysmenorrhoea, neoplasms and migraine.

Dosage: One or two capsules three or four times daily.

How Supplied: In bottles of twenty, 100 and 500.

FIRST ISSUED: July 1960.

SUPPLY RESTRICTIONS: P.I, S.1, D.D.A.

THE CHEMIST AND DRUGGIST Guide to New Medicaments, September 10, 1960

TACE tablets

Manufacturer: Merrell-National (Laboratories), Ltd., 20 Savile Row, London, W.1.

Description: Tablets, each containing 24 mgm. of Tace (chloro-trianisene, B.P.C.). The tablets are white and unmarked.

INDICATIONS: Menopausal syndrome; post-partum breast engorgement; prostatic carcinoma.

Dosage: Menopausal syndrome: one tablet daily for thirty days. Post-partum breast engorgement: two tablets three times daily for four days, Prostatic carcinoma: one tablet daily.

How Supplied: In bottles of thirty and 100.

FIRST ISSUED: July 1960.
SUPPLY RESTRICTIONS: P.I, S.4B.

THE CHEMIST AND DRUGGIST Guide to New Medicaments, September 10, 1960

DOLOXENE Pulvules

Manufacturer: Eli Lilly & Co., Ltd., Basingstoke, Hants.

DESCRIPTION: Capsules, each containing 32 mgm. or 65 mgm. of Doloxene (dextro-propoxyphene hydrochloride). The capsules are in two sizes, and are opaque orange in colour.

INDICATIONS: Pain, particularly when associated with recurrent or chronic disease; migraine, if specific therapy fails to produce immediate or complete relief.

Dosage: Adults: One 65 mgm. capsule three or four times daily.

How Supplied: In bottles of twenty, 100 and 500.

FIRST ISSUED: July 1960.

SUPPLY RESTRICTIONS: P.I, S.1, D.D.A.

THE CHEMIST AND DRUGGIST Guide to New Medicaments, September 10, 1960

FLAGYL

Manufacturer: May & Baker, Ltd., Dagenham, Essex.

DESCRIPTION: White uncoated, scored tablets each containing 200 mgm. of metronidazole.

INDICATIONS: The oral treatment of *Trichomonas vaginalis* infections of the genito-urinary tract in females and males.

DOSAGE: The recommended dosage for adults and children over 12 years is one tablet (200 mgm.) by mouth three times daily after meals for seven days.

How Supplied: In prescriber unit of twenty-one tablets,

FIRST ISSUED: July 1960.

Notes: Flagyl is not covered by poisons legislation but the labels carry the phrase "For use under medical supervision."

THE CHEMIST AND DRUGGIST Guide to New Medicaments, September 10, 1960

PAMERGAN P100/25 and AP100/25

Manufacturer: May & Baker, Ltd., Dagenham, Essex.

Description: Ampoules for intramuscular injection, each containing (a) Pamergan P100/25: 100 mgm, of pethidine hydrochloride and 25 mgm, of promethazine hydrochloride, in 1 mil; (b) Pamergan AP100/25: 100 mgm, of pethidine hydrochloride; 25 mgm, of promethazine hydrochloride and 0.6 mgm, of atropine sulphate, in 1 mil.

INDICATIONS: Pre-anæsthetic medication. Pamergan P100/25 is also used to produce obstetrical analgesia and amnesia, and in the management of severe pain.

Dosage: Pre-anæsthetic medication (P100/25 or AP100/25): Adults—1 mil; Children—0.5 mil (12–16 yrs.), 0.375 mil (8–12 yrs.).

Obstetrical analgesia and amnesia (P100/25): 1 mil when labour is well established, repeated every four hours as required.

Severe pain (P100/25): Adults—0.5-1 mil every four to six hours.

How Supplied: In box of ten ampoules.

FIRST ISSUED: July 1960.

SUPPLY RESTRICTIONS: P.I, S.1, D.D.A.

THE CHEMIST AND DRUGGIST Guide to New Medicaments, September 10, 1960

DUROMORPH

Manufacturer: Laboratories for Applied Biology, Ltd., 91 Amhurst Park, London, N.16.

DESCRIPTION: Vials, each containing gr. 1 1/10th of morphine in 11 mils, as a long-acting, aqueous microcrystalline suspension.

INDICATIONS: Intractable pain of inoperable or terminal carcinoma; post-operatively, and in other conditions of very severe pain.

Dosage: One vial (1·1 mils) is the recommended dose, but this may be increased to 1·5 mils where indicated.

How Supplied: In boxes of six vials.

FIRST ISSUED: July 1960.

SUPPLY RESTRICTIONS: P.I, S.1, D.D.A.

THE CHEMIST AND DRUGGIST Guide to New Medicaments, September 10, 1960

LIBRIUM

Manufacturer: Roche Products, Ltd., 15 Manchester Square, London, W.1.

Description: Capsules, each containing 10 mgm. of Librium (7 - chloro - 2-methylamino-5-phenyl-3H-1,4-benzodiazapine-4-oxide hydrochloride), a psychotropic compound.

INDICATIONS: Anxiety, tension, agitation; in the psychoneuroses and psychosomatic illnesses.

Dosage: One tablet three times daily, increased if necessary.

How Supplied: In bottles of twenty-five, 100 and 500.

FIRST ISSUED: July 1960.

SUPPLY RESTRICTIONS: Recommended for sale on prescription only.

THE CHEMIST AND DRUGGIST Guide to New Medicaments, September 10, 1960

BROXIL syrup

Manufacturer: Beecham Research Laboratories, Ltd., Great West Road, Brentford, Middlesex.

Description: Supplied as powder which, when dispensed, contains 125 mgm. of 6-(alpha-phenoxypropionamido) penicillanic acid (phenethicillin) (as potassium salt) in each 5-mil dose.

INDICATIONS: Conditions responding to penicillin therapy.

Dosage: One teaspoonful or more every 4-6 hours, or as directed.

How Supplied: In bottle to which is added 34 mils of sterile water to make 60 mils of syrup.

FIRST ISSUED: June 1960.

SUPPLY RESTRICTIONS: Therapeutic Substances Act.

THE CHEMIST AND DRUGGIST Guide to New Medicaments, September 10, 1960

LEDERMYCIN syrup

MANUFACTURER: Lederle Laboratories Division, Cyanamid of Gt. Britain, Ltd., Bush House, Aldwych, London, W.C.2.

DESCRIPTION: A liquid preparation of Ledermycin (demethylchlortetracycline), containing 75 mgm. in each 5 mils.

INDICATIONS: Infections due to tetracycline-sensitive organisms: infections of the respiratory tract, genito-urinary system, soft-tissues, etc.

Dosage: 3-6 mgm. per lb. body weight, daily.

How Supplied: In bottles of 2 and 16 fl. oz.

FIRST ISSUED: August 1960.

SUPPLY RESTRICTIONS: Therapeutic Substances Act.

Notes: Potent for one year from the date of manufacture.

THE CHEMIST AND DRUGGIST Guide to New Medicaments, September 10, 1960

MER-29

Manufacturer: Merrell-National (Laboratories), Ltd., 20 Savile Row, London, W.1.

Description: Tablets, each containing 250 mgm. of MER-29 (triparanol). The tablets are pale yellow and unmarked.

INDICATIONS: Hypercholesterolaemia; adjunctive therapy for conditions associated with abnormal cholesterol metabolism, e.g. coronary heart disease; generalised atherosclerosis.

Dosage: One tablet daily, preferably before breakfast.

How Supplied: In bottles of thirty and 100.

FIRST ISSUED: July 1960.

THE CHEMIST AND DRUGGIST Guide to New Medicaments, September 10, 1960

WELLDORM elixir

Manufacturer: Smith & Nephew Pharmaceuticals, Ltd., Bessemer Road, Welwyn Garden City, Herts.

DESCRIPTION: A pleasant-tasting liquid preparation of Welldorm (dichloralphenazone), containing the equivalent of gr. $2\frac{1}{2}$ in each teaspoonful.

INDICATIONS: As a sedative or hypnotic; for asthmatic or bronchitic children requiring a hypnotic.

DOSAGE: Sedative: Adults—one tablespoonful. Children—half to three teaspoonfuls.

Hypnotic: Adults—one to three tablespoonfuls. Children—two to six teaspoonfuls.

How Supplied: In bottles of 4 fl. oz. and 20 fl. oz.

FIRST ISSUED: August 1960. SUPPLY RESTRICTIONS: P.I.

THE CHEMIST AND DRUGGIST Guide to New Medicaments, September 10, 1960

LEDERMYCIN drops

Manufacturer: Lederle Laboratories Division, Cyanamid of Gt. Britain, Ltd., Bush House, Aldwych, London, W.C.2.

DESCRIPTION: A p'easantly-flavoured liquid preparation of Ledermyc'n (demethylchlortetracycline), containing 60 mgm. in each mil.

INDICATIONS: Infections due to tetracycline-sensitive organisms: infections of the respiratory tract, genito-urinary system, soft-tissues, etc.

Dosage: 3-6 mgm. per lb. body weight, daily.

How Supplied: In glass bottles of 10 mils, with calibrated dropper.

FIRST ISSUED: August 1960.

SUPPLY RESTRICTIONS: Therapeutic Substances Act.

Notes: Potent for one year from the date of manufacture.

THE CHEMIST AND DR. GGIST Guide to New Medicaments, September 10, 1960

EUVERNIL tablets

Manufacturer: Thomas Kerfoot & Co., Ltd., Vale of Bardsley, Ashton-under-Lyne, Lancs.

DESCRIPTION: Tablets each containing 0.5 gm. of N-p-aminobenzenesulphonyl carbamide.

INDICATIONS: Urological infections generally; cystitis, especially colicystitis; urethritis; pyelitis; pyelonephritis; hydronephrosis; infective residual urine in prostatic hypertrophy; as a prophylactic in vesical lavage and before and after catheterisation.

CONTRAINDICATIONS: Rare. In cases known to be sensitive to sulphonamides the customary precautions should be taken.

Dosage: Two tablets thrice daily (initial dose, doubled). Children: Reduced according to age.

How Supplied: In tubes of twenty and 100.

FIRST ISSUED: June 1960.
SUPPLY RESTRICTIONS: P.I, S.4B.

THE CHEMIST AND DRUGGIST Guide to New Medicaments, September 10, 1960

NILERGEX injection

MANUFACTURER: Imperial Chemical Industries, Ltd., pharmaceuticals division, Fulshaw Hall, Wilmslow, Ches.

DESCRIPTION: 1-mil ampoules each containing 10 mgm per mil of isothipendyl hydrochloride.

INDICATIONS: Antihistamine therapy where the parenteral route is desired.

Dosage: Up to 1 mil may be given by intramuscular or intravenous injection. When given intravenously the injection should be carried out slowly over a period of 20 seconds. Subsequent treatment should be with oral tablets unless there are special reasons for continuing parenteral therapy.

How Supplied: In boxes of five.

FIRST ISSUED: July 1960.

SUPPLY RESTRICTIONS: P.I, S.7.

Correction.—Marplan (Guide to New Medicaments, August 6)—delete references.

TRADE REPORT

The prices given are those obtained by importers or manufacturers for bulk quantities or original packages. Various charges have to be added whereby values are in many instances augmented before wholesale dealers receive the goods into stock. Crude drugs and essential oils vary greatly in quality and higher prices are charged for selected qualities.

LONDON, SEPTEMBER 6: The firmer tone of Buchu noted in last week's report was further developed during the week. Supplies of the round leaves were reported to be very short on the spot and holders were asking up to 5s. per lb. for supplies of new crop, and upwards of 4s. 6d. for 1959 crop.

A further review of the current season's American botanical production confirms earlier predictions of short crops for most items. With carry-over stocks from last season described as the lowest ever, shippers are cautious of making firm contracts for prompt shipment of certain items, among them: Cascara, Witch hazel leaves, Lobelia HERB and CHERRY BARK. The Turkish OPIUM crop is reported to be better than last year (when it was extremely poor) but the amount available is still far from plentiful.

MERCURY has been easing gradually during the past two months or so and is now around £70 per flask of 76 lb. The London market normally follows the pattern set by its American counterpart and the present position is no

exception.

OLIVE OIL is a little firmer at source and is likely to go higher if there is a sudden demand in the interval before the new crop is ready. So far the forecast for the new crop is good for oil from both French and Spanish sources.

Pharmaceutical Chemicals

ACETANILIDE. — Crystals. One-cwt. lots, 2s. 10d. per lb.; 5-cwt., 2s. 9d.

CITRATES.—Per 1b.:

	1 cwt.	5 cwt
Sodium†	s. d. 2 8½	s. d.
POTASSIUM†	2 111	2 10
Iron and ammonium*	3 7½	3 6

Powder 3d. per lb. more. *Scales 10d. per lb.

CITRIC ACID. — Domestic material (in kegs) per cwt. 1–4-cwt. lots, 220s. per cwt. 5-cwt., 216s. In paper bags, 5-cwt. lots are 208s.

CORTISONE. - One-kilo lots, ACETATE, 10s. 6d. per gm. HYDROCORTISONE, ACETATE or ALCOHOL, 11s. per gm.

GLYCERIN.—Pharmaceutically pure (s.g.

Annual purchases or spot lots of	Under 1 cwt.	1 cwt. and under 5-cwt.	5-cwt. and under 1 ton	1 ton and under 5 tons	5 tons and under 25 tons
	s. d.	s. d.	s. d.	s. d.	s. d.
DRUMS 14-lb.	281 0	276 0	272 6	268 0	265 6
28-lb.	279 0	274 6	270 6	266 0	263 6
56-lb.	275 0	270 6	266 6	262 0	259 6
TINS					
1-cwt.		254 6	250 6	246 0	244 6
2½-cwt.	-	251 6	248 0	243 6	242 0
5-cwt.			247 6	243 0	241 6
10-cwt.	-		246 6	242 6	241 0

For 25 tons and upwards the price is from 25 tons and upwards the piter is from 265s. 6d. to 240s. as to containers. Bulk deliveries in tank wagons from 326s. to 237s. 6d. Technical grade glycerin s.g. 1.2627, is 5s. per cwt, less than the above.

GLYCEROPHOSPHATES .- Per 1b. in 1-cwt. GLYCEROPHOSPHATES,—Per lb. in 1-cwt. lots:—ACID, B.P.C., 20 per cent., 4s. 7d.; CALCIUM, soluble, B.P.C., 12s.; IRON, B.P.C., scale, 15s. 9d. and powder, 14s. 9d.; MAGNESIUM, soluble, B.P.C., 14s. 3d.; MANGANESE, B.P.C., 27s.; POTASSIUM, 50 per cent., B.P.C., 3s, 9d. and 75 per cent., B.P.C., 5s. 6d.; SODIUM, 50 per cent., 2s. 7d.; 75 per cent., 4s. 6d.; 100 per cent., 8s. cent., 8s.

Hydrogen peroxide. — 27.5 per cent. (by weight), £115 per ton; 35 per cent. £138 in returnable carboys.

HYOSCINE HYDROBROMIDE.—Per oz., 102s. HYPOPHOSPHITES .- Per lb.:-

	7 lb.	28 lb.	1 cwt.
	s. d.	s. d.	s. d.
CALCIUM, B.P.C.	6 9	6 4	5 11
IRON, B.P.C.	13 9	13 3	12 9
Magnesium	11 6	11 1	10 8
MANGANESE, B.P.C.	13 11	13 5	12 11
POTASSIUM, B.P.C.	9 3	8 10	8 5
SODIUM, B.P.C	7 7	7 2	6 9

IODIDES. — (Per kilo), POTASSIUM, 50-kilo lots 16s.; SODIUM, 20s. 6d.; AMMON-IUM, 45s.

IODOFORM.—Powder, 22s. 4d. per lb. in 28-lb. lots; 21s. 8d. in 1-cwt. and 21s. 1d. in 5-cwt. lots. Crystals are 3s. per lb. more than the powder.

1SOPRENALINE SULPHATE. — (Per gm.), 100-gm. lots, 1s. 6d.; 500-gm. 1s.; 1-kilo, 9d.

Magnesium carbonate. — Per cwt., Light, 129s. or 121s. for 1-ton lots; heavy, 170s. for 1-cwt. lots; from 130s. to 135s. for 1-ton lots.

Magnesium Chloride, 1s. 10d. per lb., 5-cwt., 1s. 7d. One-cwt.

Magnesium hydroxide.—B.P.C., 1-cwt. lots, 3s. 7d. per lb.; 1-ton, 3s. 2d. per lb.

Magnesium oxide, B.P.—Light, 1-cwt. lots, 3s. 2d. per lb.; heavy, 5s. 10. per lb. Magnesium peroxide.—B.P.C. (15 per cent.), 3s. 11d. per lb. (1-cwt.).

Magnesium sulphate. — B.P. in minimum I-ton lots varies between £18 and £21 per ton according to size of crystal and manufacturer. Exsiccated, £42 per ton. All ex works.

Magnesium trisilicate.—(Per lb.), In 28-lb. packages:—28-lb., 4s. 9½d.; 1-cwt. 3s. 10d.; 5-cwt., 3s. 7d.; 1-ton, 3s. 1d.

METHYL PHENOBARBITONE. — B.P.C., 95s. per kilo for less than 25-kilo lots.

OLEIC ACID.—B.P. grade, £170 10s, per ton (£174 10s, single drum lots); I gall, tins 21s, per gall,
OXALIC ACID.—Manufacturers' rates for

1-ton lots, £128 10s. per ton, delivered in free kegs.

PARACETAMOL.-Minimum 10-cwt., 10s.,

per lb.; 56-lb., 10s. 3d.

per lb.; 56-lb., 10s. 3d.

PARAFFINS. — Prices to wholesale distributors are: — Liquid: HEAVY, B.P., £102 2s. 6d. per ton; LIGHT B.P., £84; Technical White oils, £75 10s. for the LIGHT and £89 for the MEDIUM. All in 40-50 gall. returnable loaned drums, delivered U.K. Soft: WHITE, medium consistency is £110 15s. per ton and soft consistency £107 7s. 6d. Yellow, £88 10s., all B.P., in non-returnable drums delivered.

PHERAFETIN—B.P. operaton lots 6s. 3d.

PHENACETIN.—B.P. one-ton lots, 6s. 3d. per lb.; 1-cwt., 6s. 6d.

PHENYTOIN SODIUM.—One-cwt, lots 23s. per lb.; less than 56-lb., 25s.

ROCHELLE SALT.—Powder or granulated, 5-cwt. lots or over in kegs, 220s. per cwt.; 1-cwt. 222s. 6d. (bags less 5s.).

Salicylic acid.—One-cwt., 3s. $2\frac{1}{2}d$. per lb.; 5-cwt., 3s. $0\frac{1}{2}d$. per lb.

Santonin.—5-kilo lots, 400s. per kilo (11s. 4d. per oz.).

SILVER SALTS. — PROTEIN, 1-cwt, lots, 8 per cent., 36s. 3d. per lb.; VITELLIN, 68s. 6d.

TEREBENE.—One-carboy lots, 4s. 5d. per

TEREBINTH.—B.P., 2s. 3d. per lb.

TERPIN HYDRATE.—From 6s. per lb. upwards as to quantity.

TERPINEOL. - B.P. from 3s. to 3s. 6d. per lb. as to quantity.

THEOBROMINE. — ALKALOID in 50-kilos. about 60s, per kilo.

THEOPHYLLINE.—50-kilo lots: ALKALOID ANHYDROUS, 33s. per kilo and B.P., 31s. 9d. and 12½ kilos, 32s. 6d.; AMINOPHYLLINE, 31s. 6d. per kilo; 12½ kilos, 32s. 6d. per kilo; 12½ kilos, 32s. 6d. per kilo; 12½ kilos, 32s. 6d. kilo.

THIOUREA.—Technical grade, 1-cwt. lots, 3s. $1\frac{1}{2}$ d. per lb.; 10 cwt., 2s. $9\frac{1}{2}$ d. per lb. THYMOL. - One-cwt, lots, 14s. 3d. per

UREA.—Pharmaceutical grade, £60 10s. per ton in 1-cwt, bags non-returnable; technical quality, £42 per ton (4-ton lots).

Alcohol

British spirit per proof gall .:-

BRITISH SPIRIT per proof gall.:—

Ethyl Alcohol: (95 per cent. Gay Lussac. 66 o.p.); where the number of proof gall. taken over any one year ended March 31 is 300,000 or over 3s. 10\frac{1}{4}d.; 200,000 to 300,000, 3s. 10\frac{1}{3}d.; 100,000 and less than 200,000, 3s. 11\frac{1}{4}d.; 10,000 and less than 100,000, 3s. 11\frac{1}{4}d.; 2,500 and less than 10,000, 4s. 0\frac{1}{4}d. Prices are exclusive of duty and are for tank wagon lots. In 40-pall. drums there is a surcharge of two. 40-gall. drums there is a surcharge of twopence per proof gall.

pence per proof gall.

Absolute Alcohol, 95·5 per cent., 74·5 o.p., from 4s. 2½d. to 4s. 4¾d. for same quantities; the special high strength (99·9 per cent., 75·2 o.p.) from 4s. 4¼d. to 4s. 6¾d. Doubly Rectified Alcohol (S.V.R.) 95·8 per cent., 68 o.p., from 4s. 0¼d. to 4s. 2¾d.; and P.I. Rectified Alcohol, 96·1 per cent., 68·5 o.p., 4s. 1¾d. to 4s. 3¾d. R. R. Absolute Alcohol (re-rectified), 99·7 per cent., 75 o.p.), 14s. 6d. per bulk gall. net.

Duty is £10 12s. 4d. per proof gall.

Duty is £10 12s. 4d. per proof gall.

Methylated Spirit

METHYLATORS' rates per bulk gall. in Great Britain are as follows:

Great Britain are as follows:

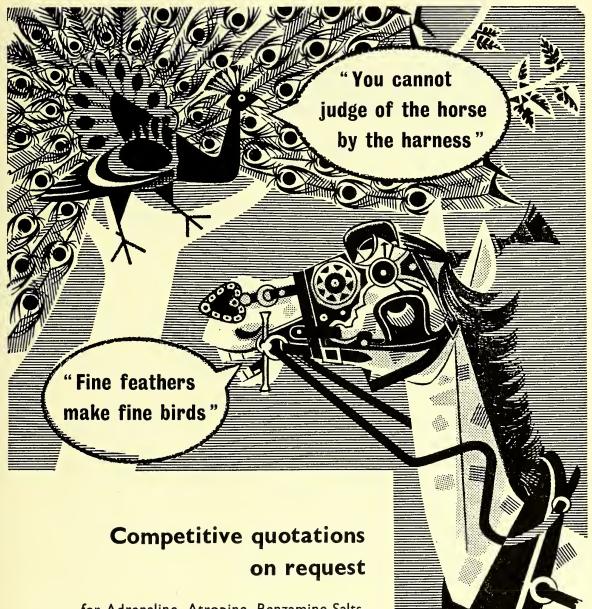
Industrial Methylated spirit: Strength 61 o.p., 500 gall. and over, 5s. 8½d.; 100 gall. and under 500 gall., 5s. 11½d.; 40 gall. and under 100 gall., 6s. 3d.; 10 gall. and under 40 gall., 6s. 8½d.; 5 gall. and under 10 gall., 6s. 8½d.; 5 gall. and under 10 gall., 7s. 2d. Strength 64 o.p., ½d. per gall.; 66 o.p. (B.P.), 1d.; 68 o.p., 3½d. more than the above rates with 74 o.p. at 6s. 6d.; 6s. 9d.; 7s. 0½d.; 7s. 6d. and 7s. 11½d. for similar quantities. Tank wagon delivery is 2d. per gall. off list price—minimum, 500 gall. For industrial methylated spirit of standard toilet quality prices are from roll indistrial inclinated spirit of standard toilet quality prices are from 7s. 0d. (tank wagon) for 500 gall. to 8s. $7\frac{1}{2}$ d. for 5–10 gall. (in drums) for

Pyridinised industrial methylated spirit: Pyridinised industrial methylated spirit: Strength 66 o.p., 500 gall. and over, tank wagon delivery, 5s. 11d.; 100 gall. and under 500 gall. (in drums), 6s. 4d.; 40 gall. and under 100 gall. 6s. 7½d.; 10 gall. and under 40 gall., 7s. 1d.; 5 gall. and under 10 gall., 7s. 6½d.

Mineralised methylated spirit: Strength 64 o.p. in one delivery, 100 gall. and under 500 gall., 6s. 4d.; 40 gall. and under 100 gall., 6s. 7\frac{1}{2}d.; 10 gall. and under 40 gall., 7s. 1d.; 5 gall. and under 10 gall.,

7s. $6\frac{1}{2}$ d.

Terms:—Deliveries free and carriage paid on returned empties; net cash.



for Adrenaline, Atropine, Benzamine Salts,
Bismuth Salts, Carbachol, Emetine and
E.B.I., Ergometrine, Hyoscine, Hyoscyamine,
Ouabain, Physostigmine, Pilocarpine,
Strophanthin-K, Sulphaguanidine, and many

B.W.& CO. Fine Chemicals



BURROUGHS WELLCOME & CO.

(The Wellcome Foundation Ltd.)
The Wellcome Building, Euston Road, London, N.W.I

other alkaloids and glycosides

CELBENIN BRL 1241

REGD. TRADE MARK

effective against all resistant staphylococci

BEECHAM RESEARCH LABORATORIES have pleasure in announcing Celbenin—the first non-toxic antibiotic effective against all resistant staphylococci.

Celbenin is bactericidal to all strains of staphylococci irrespective of their resistance to penicillin or any other antibiotic. Clinical results show that the problem of resistant staphylococcal infection can be overcome with Celbenin.

- * effective against all resistant staphylococci
- * non-toxic
- * bactericidal in action
- * no cross-resistance with other antibiotics
- * resistance unlikely to develop

Celbenin is chemically: Sodium 6-(2,6-dimethoxybenzamido) penicillanate monohydrate.

ADMINISTRATION

Celbenin is given by intramuscular injection.

AVAILABILITY

Celbenin is presented as 1 gramme vials, in cartons of 5, 25, and 100.

CELBENIN BRL 1241

REGD. TRADE MARK

DEVELOPED BY

BEECHAM RESEARCH LABORATORIES LTD

BRENTFORD ENGLAND . TELEPHONE ISLEWORTH 4111



Crude Drugs

September 10, 1960

ACONITE. — Spot: Spanish napellus, 2s. 6d. per lb.

AGAR.-Kobe No. 1, 16s. 3d. per lb., in bond.

ALOES. — Cape primes, spot, 175s. per cwt., extra quality 180s. quoted; shipment no offers. Curação, 480s., spot; 440s.,

Balsams.—Per lb.; Canada: Spot, 22s. for paper-filtered. Copaiba: Para spot, 7s., duty paid. Peru: Spot, 9s. 9d. in bond. Tolu (genuine as imported): nominal 23s. B.P., 13s. per lb.

BELLADONNA. — LEAVES (t.a. 0.53 per cent.), 1s. 9d. per lb. Dutch for shipment (t.a. not quoted) 2s., c.i.f. Root cleared on the spot.

BENZOIN. -- Sumatra block, spot £22 to

£30 as to quality.

BUCHU. — Scarce. Spot rounds, 1960 crop, 5s. per lb.; 1959 crop, 4s. 3d. to 4s. 6d. crop,

CALABAR BEANS.—Spot, 2s. 3d. per lb.

CALAMUS.—Root, 1s. 2d. per lb., c.i.f. CALUMBA.—Root, 100s. per cwt., spot. 87s. 6d., c.i.f.

CAMPHOR.—B.P. powder, 3s. 10½d. per lb. in bond.

CAPSICUMS.—Chinese 155s., duty paid; East African, off-stalk, 175s. to 220s. as to quality.

CARDAMOMS. — Aleppy greens, spot, 14s. 9d. per lb.; prompt shipment, 13s. $7\frac{1}{2}$ d., c.i.f. Seeds, shipment, 21s. 6d., c.i.f.

CASCARA.—Spot, 1960 peel, 250s. per cwt., shipment, 235s., c.i.f.

Cassia. — Fistula, 115s. per cwt., spot; lignea, 380s., duty paid.

CHERRY BARK. — Thin natural, 1s. 9d. per lb.; rossed, 1s. 11d.

CHILLIES. — Nigerian, 190s. per cwt.; Zanzibar, 360s., Mombasa, 350s. per cwt.

CINNAMON QUILLS.—Shipment (c.i.f., per lb.) 4 O's, 5s. 8½d.; 3 O's, 5s. 5d.; O, 5s. 0½d.; quillings, 3s. 3d.; featherings, 1s. 8d.

CLOVES.—Zanzibar spot, 2s. 9d. per lb.; shipment, 2s. 5\frac{1}{4}d., c.i.f.

COCHINEAL.—Black-brilliant, 12s. 3d. per lb., spot; Peruvian silver-grey, 4s. 6d.

Cocillana. — Bark, 2s. per lb., spot; ls. 8d., c.i.f.

COLOCYNTH PULP.—Spot, 2s. to 2s. 6d. per lb. as to quality.

DIGITALIS. — Purpurea for shipment, s. $2\frac{1}{2}$ d. to 2s. 7d. per lb., c.i.f., as to test.

ELEMI.—Spot, 2s. 6d. per lb. nominal. Shipment, not offering.

Ergot.—Portuguese, nominally 12s. per lb., c.i.f., for prompt shipment.

Frangula.—Spot, 105s. per cwt.

GENTIAN.—Spot: French, 155s. per cwt. GINGER. — African, spot, 235s. and 225s., c.i.f. Jamaican No. 3, spot, 210s.; shipment, 197s. 6d., c.i.f. Cochin, shipment, new crop, 160s., c.i.f.; spot 190s. (per cwt.).

GUM ACACIA. — Kordofan cleaned sorts. 167s. 6d. per cwt., spot; September-October shipment, 155s., c.i.f.

HENNA.—Indian, spot, 90s. per cwt.; new crop, November-December shipment, 62s. 6d., c.i.f.

Honey.—Australian light amber, 97s. 6d. 10 100s. per cwt. and medium amber 92s. 6d. to 97s. 6d.; Argentine, 100s.; Jamaican, 110s. to 115s.; Canadian clover, 145s. to 150s., all ex warehouse.

IPECACUANHA. — Matto Grosso 52s. per lb., c.i.f., nominal. Colombian, 53s., c.i.f. Costa Rican, 72s. 6d., c.i.f. Spot: Matto Grosso, 53s. 9d.; Colombian, 55s. 6d.

JUNIPER BERRIES.—Italian, 90s. per cwt.; German, 145s.

KARAYA. — No. 1 gum, spot 325s. per cwt. nominal; No. 2, 225s.

Kola Nuts. — Jamaican for shipment, 7d. per lb., c.i.f. African, 5½d. spot and 4d., c.i.f.

LANOLIN. — ANHYDROUS, B.P., is from 170s. to 175s. per cwt. in 1-ton lots and HYDROUS, B.P., 150s., free drums, delivered.

LEMON PEEL,—Spot, 2s, 6d, per lb.

LINSEED.—Whole, 75s. to 80s. per cwt.; crushed, 110s.

LIQUORICE. - Natural root: Persian on the spot, 45s. per cwt. Anatolian, 57s. 6d. and decorticated, 165s. Block juice: Anatolian from 190s, per cwt.; Italian stick from 310s. to 470s. per cwt.

LOBELIA HERB.—Spot: American, 4s. 9d. per lb.; Dutch, 4s. 6d. with shipment, new crop, 4s., c.i.f.

MACE. — Whole pale blade, 24s. per lb. spot; 22s., f.o.b.

MENTHOL. — Chinese: market nominal; shipment, 75s., c.i.f. Brazilian, 58s. 6d., in bond; 58s. 6d., c.i.f.; Formosan, 58s. 6d., duty paid (56s. in bond).

MERCURY.—About £70 per flask of 76

NUTMEGS. — West Indian 80's 12s. per lb., spot; sound unassorted, 9s. 6d.; defectives, 7s. 4½d.

Nux vomica.—Spot, 125s., cwt.; shipment, 105s., c.i.f.

ORANGE PEEL. — Spot: Sweet ribbon, 2s. per lb.; bitter quarters: West Indian, 11d.; Spanish, 1s. 7d.; bitter ribbon, 1s. 6d.

Orris root.—Florentine, 350s. per cwt.

ORRIS ROOT.—Florentine, 350s. per cwt.
PAPAIN. — Tanganyikan, 11s. 6d. per lb.,
c.i.f., for grade one spot, 12s. 6d. Ceylon,
No. 1 white, 12s., c.i.f.; brown, 10s., c.i.f.
PEPPER.—White Sarawak, spot, 5s. 11d.
per lb.; shipment, 5s. 5d., c.i.f. Black
Sarawak spot, 4s. 6d. September, shipment, 3s. 8d., c.i.f. Black Malabar, 460s.
per cwt. spot, and 430s., c.i.f.
PEPPERMINT LEAVES. — Dutch
still to 2s. 7d. per lb. c.i.f.
whole,

PEPPERMINT LEAVES. — Dutch 1s. 11d. to 2s. 7d. per lb., c.i.f.

PODOPHYLLUM. — *Emodi*, 200s. per cwt. spot, and 185s., c.i.f., for shipment, *Peltatum*, spot value, 375s.

Pyrethrum.—Extract, minimum, 25 per cent. w/w pyrethrins, 75s. per lb. for small lots.

QUILLAIA. — Spot supplies available at 130s. per cwt.; prompt shipment, quotations at 120s., c.i.f.

RHUBARB. — Chinese small rounds from 5s. 9d. to 6s. 9d. per lb. on the spot.

SAFFRON.—Mancha selecta, 147s. 6d. per 1b.

SARSAPARILLA. — Jamaican native red short on spot, 2s. 5d. per lb. nominal; shipment, 2s. 1d., c.i.f., nominal.

shipment, 2s. 1d., c.i.f., nominal.

SEEDS. — (Per cwt.). Anise.—Spanish, 155s., duty paid; Caraway.—Dutch easier at 175s., duty paid. Celery. — Indian, 137s. 6d., spot; shipment, 124s., c.i.f. Coriander. — Moroccan quoted at 75s., duty paid; shipment, 63s., c.i.f. Cumin.—Indian, 200s., spot; Iranian, 210s., duty paid. DILL.—Indian, 100s., spot; shipment, 91s., c.i.f. Fennel.—Chinese, 105s., duty paid; shipment, 87s. 6d., c.i.f.; Indian, 125s., spot. Fenugreek.—Moroccan, 55s., duty paid; sellers; shipment, 43s., c.i.f. Mustard. — English, 77s. 6d. to 90s., according to quality. according to quality.

SENEGA. — Spot nominally 24s. per lb.; shipment, 21s., c.i.f., nominal.

SQUILL.—White 80s. per cwt., spot.

VALERIAN ROOT. — Spot: Indian (with rootlets), 130s. Belgian, whole (max. 2½ per cent. sand) for prompt shipment, 145s., c.i.f. Dutch old crop cleared; newcrop prices awaited.

Vanillin.—Rates (per lb.) are now;-5-cwt. lots, 23s. 3d.; 1-cwt., 23s. 6d. 56-lb., 23s. 9d.; smaller quantities, 24s.

WITCH HAZEL LEAVES.—New-crop nominally 2s. 5d. per lb.

Essential and Expressed Oils

Almond. — Moroccan, 6s. per lb., duty paid.

AMBER.—Rectified on the spot, 1s. 6d. per lb.

Anise.—Chinese, 7s. per lb., spot; shipment, 6s. $7\frac{1}{2}$ d., c.i.f.

Arachis.—Spot, 2-5-ton lots naked ex mill, £142 per ton.

BAY.—West Indian, 12s. 6d. per lb. on the spot.

BERGAMOT.—Spot, from 72s. 6d. per lb. Bois DE Rose.—Brazilian, 15s. 3d. per lb. on the spot and 14s. 9d., c.i.f.

CADE. - Spanish, 3s. 6d. per lb. for drum lots.

CAJUPUT.—Spot from 9s. per lb.

CALAMUS.—Spot, 56s. 6d. per lb.

CAMPHOR, WHITE.—Chinese, 1s. 8d. per lb. in bond; 1s. 5d., c.i.f.

Cananga.—Spot, from 38s. to 46s. 6d. per lb.

CARAWAY. - Imported oil, 26s. 6d. to 37s. 6d. per lb.

Cardamom. — From 330s. per lb. for English-distilled and 260s. for imported.

Castor.—Home-produced B.P. oil, spot, £159 per ton naked ex mill (2-ton lots).

CEDARWOOD.—American rectified, 6s. 6d. per lb. on the spot.

Celery seed. — Dutch oil, 90s. per lb. and Chinese, 65s.

CHENOPODIUM.—Spot value, 37s. per lb. for original containers.

CITRONELLA. — Ceylon, spot, 6s. 6d.; shipment, 6s. 3½d. per lb., c.i.f. Formosan, spot, 6s. 6d., in bond; shipment, 6s. 4d.,

COD-LIVER. — B.P. is 11s. 6d. per gall. in charged returnable drums. Veterinary is from 9s. 6d. per gall.

CUBEB.—Small spot supplies of imported are 65s. per lb.; English, 90s.

Cumin.—Imported oil, 90s. per lb.

EUCALYPTUS.—Australian 70 and 75 per cent. eucalyptol on the spot is 5s. 3d. per lb. 80–85 per cent., 5s. 6d. Spanish (70–75), 3s. 6d. spot. Chinese 3s. to 3s. 6d., duty

LAVANDIN.—Spot from 6s. per lb. for original drums.

LAVENDER.—From 20s. to 50s. per lb. as to quality.

LAVENDER SPIKE.—Spanish, 13s. 9d. per lb. for original drums.

LEMONGRASS. — Spot, 13s. 6d. per lb., and shipment, 12s. $1\frac{1}{2}$ d., c.i.f.

NUTMEG.—Imported B.P. oil is 90s. per lb. English-distilled 100s.

OLIVE. — Spot, 19s. 6d. to 20s. 6d. per gall. in drums ex wharf, London.

Orange.—Spot quotations of sweet oil include Floridan at 3s, per lb.; West Indian, 4s. 6d.; Israeli, 7s. 6d.; Californian, 5s. 3d. to 7s. 6d.

PALMAROSA. — Spot, 36s. 6d., per lb., 34s., c.i.f.

Pennyroyal. — Spot, 12s. 6d. per lb. duty paid.

PEPPERMINT. — Arvensis: Chinese spot, cleared. Brazilian, 16s, 3d. per lb. spot and shipment, 16s, 3d., c.i.f. *Piperita*: Italian "Mitcham-type" nominally 55s. Italian "Mitcham-type" nominally 55s. per lb., c.i.f., for new crop. American, from 32s, per lb., nominal.

ROSEMARY.—Spanish is 7s. 6d. per lb. on the spot for best quality.

RUE.—Spanish is 25s. per lb. spot.

SAGE.—Spanish, 8s. per lb.

Sandalwood.-Mysore and East Indian, 140s. to 145s. per lb.

Tangerine.—From 17s. 6d. to 26s. per lb., as to quality, spot.

YLANG YLANG.—Spot, 37s. 6d. per lb.

BRITISH PHARMACEUTICAL CONFERENCE

Ninety-second meeting, Newcastle-on-Tyne, September 5-9

Academic Research and the Five Freedoms

CONFERENCE CHAIRMAN'S ADDRESS

A T the end of the 1939-45 war four freedoms were postulated as being essential to the way of life of the free world. PROFESSOR W. H. LINNELL (chairman of the British Pharmaceutical Conference), in his formal address at the Conference opening session, added a fifth which he believed to be equally important: academic freedom. His address "Academic Research and the Five Freedoms" was mainly a plea for the provision of adequate finance for education and research.

The past fifteen years, he said, had seen the lowering of the Iron Curtain and the consequent division of most of the world into two opposing camps, engendering competition that had embittered relationships and posed many problems for both sides. Throughout that period-or at least until quite recently — the great emphasis on the maintenance of relative military strengths had tended to obscure what he believed to be the most serious challenge to the free world's way of life. That was the economic threat that was developing behind the Iron Curtain, against which Britain must take immediate action if she were to be still able to compete successfully. The country's most valuable raw material was its young people, to whom education was of paramount importance if they were to develop the knowledge and powers of leadership that alone would ensure the country's survival as an important power.

The interdependence of education and research in science was fundamenand research in science was fundamental. The student body of Soviet colleges and universities was nearly five times that of Britain, France, West Germany and Italy put together. In 1958, 94,000 engineers graduated in the U.S.S.R., against 35,000 in the United States of America, Russia had 13,400,000 people with college education and over 45 millions with specialized secondary. lions with specialised secondary or grammar-school training.

Influencing the Young

It was no exaggeration to say that whether or not Britain maintained her position in the world as a great power depended largely upon her research activities in the near future. Those could not exist unless there existed personnel capable of extending the boundaries of knowledge. That, in its turn, was dependent on the education of the young and on some directive influence on their potential. In those matters dictatorial governments possessed a great advantage—they could determine and enforce a course of action. For instance, Russia was at present training five times more scientists and engineers per head of the population than the United States; and Britain came even lower in the scale. In the U.S.A., rather less than one-third



Professor W. H. Linnell

of graduates were in science and technology, against over half in the U.S.S.R. and just under half in the United Kingdom. That position could bring about the eclipse of the free world in the economy of, say, twenty years hence.

It was not often realised that pure research was a comparatively young growth, and that, before Newton, relatively little emphasis had been placed upon observation and experiment.

Foundations of Early Progress

The results gained in pure research during the seventeenth and eighteenth centuries had laid the foundation for the progress achieved in the nineteenth and twentieth. Industry had been slow to accept the importance of research, and only in comparatively recent times had it realised that research was necessary for survival. Even today, immediate profitability tugged against longterm scientific projects. A hundred years ago, or even less, the making of most products had been empirical—dependent upon "know-how" often handed down from father to son. But two facts had slowly emerged: (a) that the accumulation of proved and organised knowledge had an economic value; and (b) that whilst "know-how" often led to excellent products, such processes could not meet the challenge of the desire for new products, or even the alteration in the composition of basic materials. Knowledge of the physical and chemical facts underlying any process had been found a better guide to the certainty of success than any amount of empirical "know-how."

It was wrong, and even dangerous, to evaluate research solely by its con-tribution to modern living. How often

had the purists been confounded after claiming that the beauty of a certain piece of research "resided in the fact that it could not be of use to anybody." Van Röntgen had no thought of making the body transparent when he discovered the penetrating powers of x-rays; though the rare gases were discovered as a result of pure curiosity, argon-filled lamps and neon in glow discharge tubes were now in use everywhere Abstract mathematic research had led to the introduction of the thermionic valve.

Further examples could be cited, but sufficient had been said to establish the thesis that Britain's position in the world might well depend upon the fundamental research efforts of the immediate future, and that factor in turn focused attention on the need to edu-

cate the country's youth.

The conflict between the humanist tradition in education and the claims of reading, formal studies, sports and cultural interests, travel and languages—all had interests, travel and languages—all had their parts to play. However, it was easier to produce a specialist than a balanced personality. He looked forward to the day when those following a classical tradition would have some knowledge of general science and those following a science discipline some appreciation of the humanities. The responsibility for educating Britain's youth rested mainly on the shoulders of the teachers, and that was another point at which the Soviet system appeared to have an advantage. By all accounts teachers in the Soviet Union were privileged people who were accorded the status that was their due. That was certainly not true in Britain and it was thus impossible to attract the most capable people into so impor-tant a profession. The question was mainly one of money, and it was only when the country demanded a much greater expenditure on education than heretofore that the "powers that be" would move in the right direction.

That was not a criticism of the teaching profession but of the general attitude to teachers and to education. The universities were entirely dependent upon output from the schools, whose quality had a vital connection with the calibre of university entrants.

Fortunate Freedom

In some respects British universities were more fortunate than those of any other country because they had re-tained, in the fullest measure, their academic freedom. The technical colleges also had an important rôle to fill in the training of scientists and technologists, but unfortunately the capacity of the universities and the more advanced technical colleges was insufficient to provide the number of highly trained personnel required to meet the challenge that was bound to come.

In its turn, the country's research effort was dependent on an adequate body of workers capable of original thought and possessed by a burning desire to extend the frontiers of knowledge. The keystone of the edifice of that future was centred on an intelli-

gent attitude to education.

Modern scientific research stemmed from the work of Newton early in the seventeenth century, but almost 200 years had elapsed before Newton's method — the method of cause and effect—became the accepted basis for every science. In the eighteenth century physics, chemistry, electricity and engineering were not ready for the rationalisation of theories, and it was a time of experimentation by manufacturers and craftsmen which paved the way for the progress made during the nineteenth century. Recognition of the economic soundness of the scientific approach had ultimately led business men to subsidise science in the hope of obtaining a remunerative return. At first, finance was more easily obtained for projects that showed a reasonable chance of early profits. In other words there was a bias towards deductive research, which aimed at converting existing knowledge into commercial use, and that attitude was logical in the early years when a large fund of pure knowledge awaited commercial exploitation.

Spared Responsibility

Broadly speaking, Britain's research effort was shared between the universities, independent research institutions, grant-aided research institutions, research associations, Government research associations and industry itself. Whereas the universities should be concerned mainly with extending the frontiers of knowledge in an atmosphere of intellectual freedom and usually without regard to immediate applications of the work, industry should be mainly responsible for application and development. That was not to say that industry should never be concerned with fundamental research—far from it.

Professor Linnell was convinced that the larger organisations at any rate should deliberately direct a proportion—however small—of their research effort into the paths of the "pure and unadulterated." The other organisations named occupied an intermediate position and could very well provide a link

between the two extremes.

It would be realised that, although it was impossible to plan discovery, it was quite possible to plan for it. The basic problem facing all today was how to plan the research effort without injuring the intellectual freedoms that must be jealously guarded. In the Soviet Union, where a single authority provided direction, the problem did not exist, though the harm caused by misdirection was ever present — as witnessed by the suppression of certain views on genetics. A further difficulty

stemmed from the unpredictability of the results of research which made any attempt at rigorous direction and control illogical. Could anything be done within the universities to ensure that the great potential for research was utilised in really worth-while projects? It was a tragedy that much effort at present was wasted on second-class projects, though it must be realised that research within the universities served at least two different, but allied, functions. First, there was research itself and the results that stemmed from it. Secondly, but not of secondary importance, research educated the teachers to improve and extend the basic training of future scientists. It had been said that the most important rôle of a scientist was the education of the next generation, Professors could obtain a thorough insight into the principles of science only through research, and the proof of mastery of a subject resided in the power to extend it. The man who could discover new knowledge must know the nature as well as the limits of the old knowledge. The training of the future scientist was an investment that would produce dividends and not depreciate in value. Pasteur had said that, in the field of observation, chance favoured only the trained mind: Fleming's discovery of penicillin was a case in

In addition to the universities, there was an important research potential in the more advanced colleges of technology. Often they suffered from a lack of expert guidance but they were none the less capable of making a serious contribution to the research effort, and some attempt must be made to translate that potential into worth-while endea-"Would it be too much to ask the universities and many of the individual colleges in the federal universities each to adopt one or more of these institutions in order to provide the help and stimulus required? In this connection it is possible that the Pharmaceutical Society, through its newly established Department of Pharmaceutical Sciences, will be able to give some help to those departments concerned with pharma-ceutical research, but it is doubtful whether this would be quite as effective as a direct link with a university

or college."

Attracting Talent

Returning to the general question of increasing the importance of research done in educational institutions, he thought some means must be evolved of leading those of adequate intellect who had no impelling alternative purpose into the more important fields of endeavour. If that could be done without trespassing on academic freedom, beneficial results might ensue. One way would be for the universities themselves to set up separate science committees for each scientific discipline to advise on all matters concerning research. There would be no obligation for any individual staff member to consult the committee, but the opportunity of vol-untarily doing so would be there. The committees might act as a clearinghouse for ideas, and opportunities for people to meet others working on similar projects could be more easily

arranged. The committees might have official or semi-official contact with other research associations but, as the whole of the arrangements would be in the hands of the universities, no question of any encroachment on academic freedom could arise. Although any increase in committee work was a questionable step in that case it was justified in order to make the best use of the limited resources of scientific man-power in Britain. The Department of Scientific and Industrial Research and the Medical Research Council at present made a contribution along those lines, and the successes they had achieved emphasised the value of the method.

If scientists were to convince the public that a great deal more money must be spent on education and research, much greater attention must be focused on the absolute necessity for When one realised research. already each year between one and two million research papers appeared in 50,000 journals, and that 30,000 new books and 200,000 patents were added yearly, the problem of adequate publication seemed insuperable, especially when most of the publications mentioned were unintelligible to all but a few specialists. Nevertheless, if adequate money was to be voted for education and research, the general public must be convinced that it was money well spent. The B.B.C. was helping considerably in that respect in various programmes such as "Eye on Research," but the object could be achieved only if the Press as a whole regarded the subject of research as of first-class importance and meriting a position on the front page.

It was well known that research was expensive, and unfortunately it was often regarded as an expensive luxury. In point of fact it was a "luxury" which none could afford to ignore. It had been calculated that each research worker cost on an average about £3,000 per year. Even in the universities a parsimonious attitude was common, and many first-class workers were struggling against the odds of inadequate technical assistance. The present was a propitious time for emphasising the necessity for adequate finance. In times of war—hot or cold—no difficulty occurred in providing money for re-search programmes allied to the war effort, and it was abundantly clear that that acted as a great stimulus and produced results much more quickly than would otherwise have been the case. Today there was a greater chance of a reduction in defence expenditure than for many years past, but a great mistake would be made if a major portion of the money thus saved were not redirected into education and research.

Action Wanted

Most thinking persons recognised the paramount importance of education and research, but everyone must be prepared to do something about it. The importance of backing opinions by the necessary action was axiomatic, and hence the general public must be convinced that provision of the necessary finance was not only desirable in terms of self-interest, but was a "must."

BRITISH PHARMACEUTICAL CONFERENCE

Change to Metric System in Pharmacy

DR. CAPPER ADDRESSES FIRST PROFESSIONAL SESSION

THE first professional session of the British Pharmaceutical Conference, held on September 6, was devoted to a paper presented by Dr. K. R. CAPPER on "The Change to the Metric System in Pharmaceutical Practice.

"We all know Dr. Capper by repute," said Mr. Tom Reid (president of the Pharmaceutical Society) in opening the session. "He is director of the new Department of Pharmaceutical Society and is still actively concerned." Science and is still actively concerned with the Society's publications, though no longer directly responsible for them." The president then called upon DR. CAPPER to present his paper. The monograph, which was taken as having been read, had recalled that, at the British Physical Conference 1865. ish Pharmaceutical Conference of 1895, William Elborne (pharmacist at Univerwithain Liberte Washington, had read a paper on the metric system in pharmacy in which he attacked a proposal that the formulas in the next British Pharma-copæia (1898) should be given in both metric and Imperial systems. He had regarded the proposal as "the thin end of the wedge" of the metric system, the result of which would be that in a future. Pharmacopain English, weights future Pharmacopæia English weights and measures would slip out altogether. He could see no reason why the metric system should be introduced into the system should be introduced into the everyday practice of pharmacy. Much of the discussion that followed was critical of his paper, and the B.P., 1898, did give its formulas in metric as well as Imperial units. Although the metric system had been used in an earlier edition of the B.P. in describing analytical reagents, it was the first official use of the system which was pharmaceutically significant. As long ago as 1955 the B.P. Commission announced that apothecaries' weights and measures would be abandoned in the 1963 edition, so that Elborne's prophecy would be fulfilled in three years' time. The question now at issue was how it should finally supplant the apothecaries' system.

Pharmacopæial Trends

In the Pharmacopæia of 1948 the drugs usually prescribed in doses of



ence programme. From the left, Messrs. M. Patel, India, M. Alaudinn, Pakistan, and J. G. Bhatt, India.

grains or minims were about three times as numerous as those prescribed in metric doses. In the B.P., 1958, the numbers in those categories were about equal. So far that had not significantly affected dispensing methods. Metric-dose drugs were usually supplied as tablets or other manufactured products; whether they contained doses in grammes or grains, the dispensing operations were the same. Apart from occasional pre-scriptions for external preparations written on a percentage basis (i.e., a metric basis), the majority of pharmacists rarely received prescriptions writ-ten in the metric system which re-quired extemporaneous preparation. In a sample of 258,000 prescriptions examined recently, only twenty-one such prescriptions occurred.

New Drugs All Metric

Virtually all drugs discovered in the last twenty-five years were given in metric doses in the form of manufactured products, while the older drugs were given in apothecaries' doses whether in manufactured products or in preparations which were dispensed extemporaneously. Therefore, at the present time, both the metric and apothecaries' systems were being used without apparent inconvenience to either doctors or pharmacists.

The metric system had the advantage of

- (i) being the standard international system of weights and measures. The medical literature, the pharmacopæias and the prescriptions of most countries were in that system. It was also the system most widely used in international commerce, and the pharmaceutical industry had a substantial export business which it was essential to maintain. The apothecaries' and avoirdupois systems were limited to Britain and other countries in the Common-wealth and to the United States. Some United States units differed appreciably from those used in Britain.
- (ii) being used in all countries in scientific work including scientific medicine, e.g., in relating dose, blood concentration and effect.
- (iii) being a decimal system throughout and having a direct relationship between units of volume and weight and, therefore, simple for calculating percentage concentrations.
- (iv) being the system for which aids to calculation such as log tables, slide rules and calculating machines were designed.

The apothecaries' system was not, however, without its advantages, the

- foremost being:
 (i) that all British pharmacists in practice at the present time were experienced in the use of that system. The use of a system of weights and measures over a long period produced not only mental short-cuts, e.g., in multiplying doses up to the amount required for the total volume but, what was equally valuable, checks based on frequently repeated actions. All experienced pharmacists knew what quantities of a grain, 60 grains or 240 grains of most solid drugs looked like and a sticking balance would be noticed immediately. Similarly the quantities of liquid and solid drugs normally prescribed were so familiar to him that any overdose or miscalculation was immediately apparent. Obviously, pharmacists would apply the same rules of accurate manipulation as well as checks on dosage in dispensing metric quantities, but lack of familiarity would reduce, for a time, the speed of dispensing.
 - (ii) the apothecaries' system, with its larger units consisting of 60 and 480 grains and minims, fitted in very well with established frequencies of dosage, i.e., "three times daily" and "every four hours." The advantage of simplicity in cal-culation which a decimal system of weights and measures possessed was greatly reduced if the multiples prescribed were non-decimal numbers such as 16, 24 and 32. Medicine was taken in divided doses in a day of 24 hours and often before or after the three principal meals. The 24 hour day was universally accepted. There were those who asserted that 12 was a more useful number than 10. For instance, Professor Aitken had described the number 12 used as a unit in calculation as a "product of English practical genius. Certainly 12 was superior to 10 in that it could be divided by 2, 3, 4 and 6, whilst 10 could only be divided by 2 and 5. An octavial system also had some advantages over a decimal system and a scheme of weights and measures based on multiples of eight was proposed by the American Pharmaceutical Associa-tion in 1859; a modification of that was put forward by the famous Newcastle pharmacist, Barnard Proctor, at the 1864 Conference.
 - (iii) while prescriptions in either system could be misread, and the apothe-caries' ounce and drachm signs were particularly susceptible to bad penmanship, the decimal system was even more dangerously liable to

A committee was appointed in 1949 by the President of the Board of Trade to review weights and measures legislation. Among other matters, the

Committee considered the abolition of the apothecaries' system. The views of the British Medical Association and the Pharmaceutical Society were submitted and were referred to in the report

which was issued in 1951.

The committee considered that the universal adoption of the metric system would have many advantages, and favoured a transition period no longer than was necessary to ensure that sufficient supplies of replacement equipment were available. It recommended that, after a period of five years, the following units should no longer be lawful for use in trade—the scruple, the drachm, the apothecaries' ounce, the minim and the fluid drachm; that all the present apothecaries weights and measures with the exception of certain grain weights and fluid ounce measures should no longer be lawful for use in trade.

So far there was nothing to indicate that the Board of Trade intended to sponsor the proposed legislation. Since July 1, 1953, the major drug houses, by agreement reached in the Association of British Pharmaceutical Industry, had been supplying galenicals and drugs in bulk in metric quantities and so had anticipated any other action

by some years.

Medical opinion supporting the use of the metric system as the only system in medicine was undoubtedly strongest in the schools of medicine and for several years most medical students had been taught to consider the dosage of drugs in metric quantities. In order that the students should in future prescribe in the metric system, it was obviously necessary that it should be exclusively used for all prescribing within the hospital to which they were attached.

While there was a general wish in teaching hospitals to encourage prescribing in the metric system, it was considered pointless to do so until

(i) metric equivalents were officially agreed upon to enable all prescribers to use the same terms,

(ii) the prescribed drugs, especially tablets and ampoules, were available commercially in the agreed metric strengths, and

(iii) bottles and other containers were easily obtainable in metric capa-

cities.

The changes to be made in the B.P. 1963 would, to a considerable extent, satisfy the second condition. The first and third conditions would not auto-

matically follow the B.P.

The British Pharmacopæia Commission's decision to abandon the apothecaries' system in the B.P. 1963 was not an isolated and arbitrary action but followed other policies made elsewhere by other bodies and much pressure, especially from the academic and scientific leaders of the medical profession. It also represented the final and logical conclusion of a series of decisions made by those who had been responsible for preparing the B.P. for a period of over sixty years.

Effect of the B.P. 1963

The present B.P. directed that, if no strength of aspirin tablet was prescribed or demanded, one containing 5 grains should be supplied. In the B.P., 1963, the strength to be supplied would be

stated in metric units. If that were all that were done, it would mean that pharmacists would have to carry double stocks—in that instance, of 5-grain tab-lets to supply if that strength were stated by the doctor or customer, and of those containing the metric amount (probably 300 mgm.) which the B.P. could require to be supplied if no strength were stated. That would be unsatisfactory not only to pharmacists and pharmaceutical manufacturers but also, t could be assumed, to the Commission. What was more likely was that pharmacists would be authorised, and probably directed, to supply tablets containing specified metric equivalents given in the form of a table that would apply to all B.P. tablets and to all strengths of those tablets. Likely equivalents

Approximate Difference ½ grain ≡ 30 mgm. -8 per cent. 1 grain \equiv 60 mgm. 1½ grains \equiv 90 mgm. -8 per cent. -8 per cent. ... 100 mgm. + 3 per cent. Or ... 2 grains \equiv 120 mgm. -8 per cent. ... $5 \text{ grains} \equiv 300 \text{ mgm}.$ -8 per cent.

The equivalents were something of a compromise. By using the less approximate equivalent of 65 mgm, for 1 grain (a difference of not less than -0.3 per cent.), the apothecaries dose tablets at present supplied could be used. The equivalents using that figure were, however, too complicated to be acceptable as being genuinely metric. On the other hand, 60 mgm. was not a quantity that would be selected as a metric dose if a strength could be fixed without having to consider existing conditions. The United States Pharmacopæia and the United States National Formulary gave the "usual strengths" of most tablets, and those containing the older drugs were on a 60 mgm. ≡ 1 grain basis. For example, the "usual basis. For example, the "usual strengths" of aspirin tablets were given in the U.S.P. as 150 or 300 mgm., whereas in continental pharmacopeias the strengths specified were variously 250, 500 and 1,000 mgm.

Merits of "60 mgm. $\equiv 1$ grain"

There were at least three good reasons why the 60 mgm. = 1 grain system was likely to be adopted.

(i) It was doubtful if, by September 1963, there would be many doctors prescribing in the metric system. To substitute a tablet containing 8 per cent. less drug was to keep well within the limits of therapeutic variation. If 50 mgm, were to be selected as an equivalent of 1 grain as a better metric figure, the difference was 23 per cent.

(ii) Some of the B.P. tablets were sold over the counter and the public expected, for example, one or two aspirin tablets to be efficacious. That they might not be if they were con-

siderably weaker.

(iii) A table of equivalents would have to apply to repeats of prescriptions written before September 1, 1963.

If pharmacists were to cope with the changes that would take place on September 1, 1963, three conditions were essential.

1. That pharmacists should be given complete protection in law for all that they were required to do. That must cover a variety of hazards from tests under the Food and Drugs Act and the Drug Testing Scheme to inspection of 4 and Dangerous Drugs Schedule Records.

2. That there was an adequately long transition period in which to dispose of stocks of apothecaries'-dose prepara-tions held in September 1963. The large number of articles affected would make it necessary to give careful thought to the period of grace which could reasonably be demanded. Even after that ended, it was to be hoped that analysts and those who applied their results to the undoing of pharmacists would exercise discretion in dealing with tests on those products.

3. The medical profession must be fully informed of what was happening. Even so, pharmacists could expect some difficulties, especially in dealing with the

public.

What would happen after September 1963, to extend further the use of the metric system in pharmacy, would depend to a considerable extent on what was done in the British Pharmaceutical Codex and British National Formulary. The Codex was prepared by a committee of the Council of the Pharmaceutical Society and was published by authority of the Council. The British National Formulary was a joint production of the Society and the British Medical Association. As both organisations appeared committed to abandoning the apothecaries' system, the most effective action they could take would be to direct that all the formulas should be in the metric system. The effect on pharmaceutical practice would be much greater than the effect of the changes proposed for the B.P., 1963, as the range of products was much wider and included most medicines that were extemporaneously dispensed.

Before considering if and when such far-reaching decisions should be made, it was essential to examine all the pharmaceutical problems which would result. The most difficult to solve were those affecting liquid medicines. To



Mr. J. Gilliland (Winterton Hospital) shows Mr. G. H. M. Graham (chairman, Central N.H.S, (Chemist Contractors) Committee) a set of portable scales once the property of Dr. Edward Emerson Callender, Wylam, who died in 1867.

satisfy customers, the bottle must not only hold the volume required but should be reasonably full when it does so. The volumes of liquid medicines prescribed for internal use were usually multiples of the dose, and the standard metric dose volumes must, therefore, be decided before the capacities of bottles for internal medicines could be determined.

Dose-volumes

The tablespoonful was regarded as equivalent to 240 minims (14.2 mils) but, even if a graduated medicine glass were used, the patient might well re-ceive a dose differing widely from that. Fifteen mils was the accepted equi-

valent of the tablespoonful (or soupspoonful) in the pharmacopæias of the principal metric countries. If that volume were accepted as the metric equivalent of a tablespoonful, the difference was not significant compared with variations occurring when doses of medicine were measured by or for the patient.

The teaspoonful dose was less easily dealt with as there was no similar agreement about what the metric volume of the dose should be; 3.5 mils was the exact equivalent of 60 minims, 4 mils that most usually accepted in Britain and 5 mils elsewhere, includ-

ing the United States.

The 5-mil equivalent for a teaspoonful had much to commend it. It was not essential for the larger dose volume to be four times the smaller dose volume. That ratio was not used in other countries. Although for a long time the U.S.P. recommended 4 mils as the equivalent of a teaspoonful, 5 mils was now accepted in the United States; the National Bureau of Standards defined it as 11/3 fluid drams (U.S.A.), i.e. 4.93 mils. The standard tablespoonful was defined by the Bureau as 3 teaspoonsful. A disadvantage of a 5-mil dose was that it differed so appreciably from the 60-minim teaspoonful that it would be difficult to apply in any transitional arrangement in which apotheand metric dose equivalents were accepted as interchangeable.

Liquid medicines for internal use were usually prescribed in multiples of doses, although it was possible that doctors might prescribe them in volumes such as 200 or 500 mils. The method of writing the formula for internal medicines in terms of an individual dose as in the B.N.F. was now, and was likely to remain, standard practice. Assuming that the standard dose-volumes were to be 15 mils (one tablespenful) and 4 mils (one tablespenful) and 4 mils (one tablespenful). tablespoonful) and 4 mils (one teaspoonful), the capacities of bottles at present in use were not quite adequate

in most instances. That is shown in table at foot of page.

Those figures showed that there would have to be an increased capacity of about 11 per cent. in the two smaller sizes and of half that in the larger

In France, mixtures were generally prescribed in volumes such as 150, 180, 210 and 300 mils, which were multiples of 15 mils, the Pharmacopæia Gallica equivalent of a soupspoonful. Of those volumes 150 and 210 mils were apparently the most popular quantities.

The volume of external preparations

prescribed depended on the attitude of the individual prescriber. If he thought in terms of fluid ounces and converted those to millilitres, the volume would be 30 x the number of fluid ounces,

The decimal point was not a very impressive character and, if it were missed, a dose would be increased tenfold, a hundredfold or even more. Very large increases would be noticed by their absurdity but tenfold differences between infant and adult doses of some drugs, e.g. chloral hydrate, were not uncommon. While both systems were uncommon, while both systems were in use in prescribing, a further danger was the confusion of abbreviations for "grain" and "gramme."

If and when the B.P.C. and B.N.F. dropped the apothecaries' system, the formulas of all preparations which at treatment was designed to give a present was designed to give a

present were designed to give reasonable figures for grains and minims must be amended to give equally reasonable figures in the metric system. For

example:

	Alkalin	NE MIXTURE OF IPECACUANI	IA
		A	В
		Present formula	Adjusted formula
Sodium bicarbonate		10 grains=648 mgm.	$600 \text{ mgm.} = 9\frac{1}{4} \text{ grains}$
Ammonium bicarbonate		3 grains=194 mgm.	200 mgm. = 3 1/12th grains
Ipecacuanha tincture		10 minims=0.59 mil	0.6 mil=10 1/7th minims
Chloroform water to		$\frac{1}{2}$ fl. oz. = 14.2 mils to	15 mils=253 minims

i.e., 30, 60, 120, 180 mils and so on. A more rational use of the metric units would be to prescribe volumes such as 50, 100, 200 (or 250) and 500 mils.

A change to metric prescribing and dispensing would inevitably increase the cost of bottles to pharmacists. Means must be found to persuade doctors to prescribe a limited range of volumes for internal medicines and a second limited range for external medicines. What those ranges were to be should be decided beforehand by the two professions.

Action in Two Stages

The problems of containers for metric volumes of liquid medicines, therefore, required action in two

stages.
(i) To determine exactly what sizes and types of bottles would be needed, and this was a matter for the prescribers as well as for pharmacists.

(ii) To ensure that the bottle manufacturers would be able to supply adequate quantities of those bottles by the time they were needed.

To avoid a heavy increase in cost, planning was needed to keep the range of metric-volume bottles within reasonable limits. It was equally essential to avoid, if possible, a period during which a full range of both Imperialvolume and metric-volume bottles must be manufactured and stocked.

One of the undoubted weaknesses of the metric system in prescribing was the ease with which mistakes could be made in writing prescriptions and in interpreting what had been written.

In a discussion on a motion at the Branch Representatives meeting in May 1956, speakers asked that both apothecaries' and metric weights and volumes should be retained in the B.P.C. and B.N.F. The example given above showed that, for many preparations the formula was reactively factions, the formula was practicable for dispensing purposes in only one of the two systems. It was not possible to give those formulas in such a way that the figures were rational and practical in both systems at the same time except by permitting differences which, while therapeutically unimportant, were wider than those at present permitted. mitted. It could be argued, of course, that that was what should be done and that the pharmacist should be allowed to dispense either during a transition period. A variation, to deal with stocks of Imperial-volume bottles, would be to give the figures in column B for the medicaments and allow the volume to be adjusted to either 15 mils or ½ fluid ounce at the discretion of the pharmacist.

Desirable Modifications

When the formula was finally changed over to the metric system, unless there were good therapeutic reasons for making the metric formula closely resemble the present formula, some alterations in the figures in column B could be made with advantage. The volume of the tincture might be altered to 0.5 mil and sodium bicarbonate reduced to 500 mgm. If there were no medical objection, ammonium bicarbonate might be increased to 250 mgm. In that instance there seemed to be no obvious reasons for supposing that a mixture made to that altered formula would present difficulties, but past experience showed that it was always wise to test that practically. The assay methods would also need to be re-examined in the light of the alterations.

The implication was, therefore, that B.P.C. and B.N.F. formulas should not be amended to the nearest metric whole numbers but should each be carefully considered and, if much

			A	В	B-A
			Capacities	Capacities	
Bottles to hold		required with	required		
			apothecaries'	with metric	
			doses*	doses	
			mils	mils	mils
16 x teaspoonf	ul doses	 	2 fl. oz. (57)	64	7
32 x		 	4 fl. oz. (114)	128	14
12 x tablespoor			6 fl. oz. (170)	180	10
16 v	"	 	8 fl. oz. (227)	240	13
24 ×		 	12 fl. oz. (341)	360	19
32 x ",	*9		16 fl. oz. (454)	480	26

^{*}The exact metric equivalents are given in brackets

altered, tested for possible unsuspected difficulties. Other preparations must be treated similarly.

A Call for Collaboration

It was important to note that in putting its views to the Hodgson Committee, the Society had stressed the need for the doctors to collaborate in the change and not to throw upon pharmacists the entire responsibility for translating prescriptions from one system into the other. "Collaboration," as used in that context, could not mean anything as passive as acceptance of the metric system by representatives of the medical profession so long as individual doctors did not have to do anything about it. The minimum that pharmacists could accept was an assurance that the great majority of medical prostitioner fully connected. medical practitioners fully supported the change and were prepared, after an agreed date, to write their prescriptions in the metric system; pharmacists should not be required to do more than correct an occasional lapse and certainly not to translate every pre-scription from apothecaries' to metric quantities. If pharmacists transposed and dispensed in the metric system prescriptions written by practitioners with apothecaries' symbols, and the medicine was taken by patients in teaspoonful and tablespoonful doses, progress towards the use of the metric system in medicine would not have been furthered by one inch (or one centimetre). All that would have happened

was that a lot of pharmaceutical time and effort would have been wasted.

When it was evident that the majority of general practitioners desired the change, a Code of Practice for Prescribing in the Metric System should be prepared by representatives of the two professions. Although it might be some time, possibly even a long time, before the Code would be needed for general practice, it was necessary to have it ready and equally necessary that it should be used in the medical schools which taught metric prescribing and by those individual prescribers who were now using the

system.

Pharmacists' Policy

What would happen in the B.P., 1963, and what was happening in the medical schools would affect the practice of pharmacy. Opposition from the pharmaceutical profession might retard it but could not reverse it. What pharmaciets had to decide the decide of pharmacists had to decide was whether to attempt to retard that change or to accelerate it. Until the medical profession had made it clear that it wanted and would actively support the total change to the metric system, organised pharmacy should act only if there were good pharmaceutical rea-sons for doing so. Leaders in academic medicine seemed to be convinced that the medical reasons were already pressing enough to warrant action in the near future and the B.P. Commission, which was under the ægis of the General Medical Council, had accep-ted that that was so. There was, ted that that was so. There was, however, little indication that at present the medical profession as a whole was following its leaders. From 1963 all B.P., and probably B.P.C. and

B.N.F., tablets and other single-dosage would be dispensed in metric forms would be dispensed in metric doses. For pharmaceutical reasons, it was appropriate to divide other B.P.C. and B.N.F. preparations into two

categories.

(i) Liquid medicines for internal use.— The apothecaries' quantities in the formulas for mixtures in the B.N.F. lent themselves to rapid and accurate dispensing and there was no pharmaceutical reason valid in present circumstances for abandoning the apothecaries' system for those preparations. That situation would continue until pharmacists received many prescriptions for preparations of the older drugs written in the metric system. Until then pharmacists should act only on an unequivocal request from the medical profession to abandon entirely the

apothecaries' system.

(ii) Liquid and solid medicines for external use.—For medicines in this group, on the other hand, there were good pharmaceutical reasons for metric formulation. The concentration of active medicament was the important factor and that was most commonly expressed as so much per cent., i.e., in a decimal system. Most of the formulas for lotions, ointments, etc., in the B.P.C. and B.N.F. were like that, although the quantities were often manipulated to give more convenient figures in Imperial or apothecaries' units. In spite of such adjustments, inconvenient quantities did occur. The position was further complicated for ointments and similar preparations because on prescriptions those were often scribed in apothecaries' while larger amounts might be required in Imperial ounces. The difficulty of formulating to give reasonable quantities for a 480-grain ounce, as in the B.N.F., and a 437½-grain ounce, as in the B.P.C., was obvious. B.P. preparations were formulated in the metric system and if they had to be dispensed extemporaneously either metric weights and measures must be used or the apothecaries' equivalents calculated. There could be little doubt that the majority of doctors who gave any attention to quantitative aspects of external preparations did think of them in terms of percentage con-centration. If agreement could be reached with the medical profession and the Ministry of Health on rational metric volumes and weights of those preparations to be supplied when these were prescribed in Imperial or apothecaries' units, then serious consideration should be given to transferring to the metric system for external medicines so soon as practicable and before any similar action on mixtures and other internal liquid medicines. An advantage of that scheme to pharmacists was that for a period they would be regularly using metric weights and measures for a proportion of extemporaneous dispensing, where problems should be relatively few, before tackling the more complex problems likely to occur with mixtures.

The order in which the abolition in stages would occur if those suggestions were accepted was, therefore:

First stage: All tablets, capsules, in-

jections to be in metric doses. That had already been decided for the B.P., 1963, and there seemed little reason for not doing the same for the relatively small number of B.P.C. and B.N.F. preparations of that type.

SECOND STAGE: Ointments, lotions, eyedrops and other external preparations to be dispensed only in metric quantities. The time for that change would be determined by agreement with the medical profession and the Ministry of Health and those preparations would then be supplied in metric

quantities however prescribed.

THIRD STAGE: Mixtures, linctuses and other liquid internal medicines usually dispensed extemporaneously. The stage would mark the complete abolition of the apothesystem and should only occur when pharmacists could be assured that most medical practitioners wished to prescribe in the metric system and were prepared to try and do so.

The timing of that graded revolution started from a fixed point—that was the first stage which would commence in September 1963. The institution of the second stage depended on the time required to obtain agreement on total quantities to be supplied and for the container manufacturers to make available a suitable range of containers. Whatever was decided, it was doubtful if that could be done in time to make the required changes in the B.P.C. and B.N.F. which were to be published in 1963. A possible date would be September 1968, to coincide with the date on which the ninth edition of the B.P.C. and the eighth edition of the B.N.F. would come into force. The time for introducing the third stage depended on the ability of the B.M.A. and the teachers of medicine to convert the medical profession as a whole to the use of the metric system for all drugs. While September 1973 might be a practical date, the essential conditions could only be produced by action within the medical profession.

Attack from Two Sides

That middle-of-the-road attitude was likely to be attacked from both sides. Those who supported an immediate change would point out that, at the best, the proposed third stage development would delay the abolition of the apothecaries' system for at least ten years after 1963. They might also point out that the Society had accepted a period of five years as a reasonable period for abolishing the system when replying to the Board of Trade's request for comment on the Hodgson Committee's report. Presumably, however, the Society expected some action from the Board of Trade which had not happened and it was also pos-sible that not all the problems had been fully comprehended. The sup-porters of the metric system might assert that the continued use of the assert that the continued use of the apothecaries' system, especially in the B.N.F., would reverse the teaching in the medical schools, but that could be challenged. Manufactured products such as tablets would be in metric dosage after September 1963. It should be the formidable and editorial task. not be too formidable an editorial task

to amend the B.N.F. and possibly the B.P.C. to indicate prominently the approximate metric dose of the therapeutically active ingredients in other preparations. The alternative edition of the B.N.F. did that to some extent, although the figures could be rational-

Those who attacked from the other side would assert that, if one left well alone, nothing would happen. It must be remembered that, whatever pharmacists might decide, influential members of the medical profession were determined otherwise. Pharmacists had it in their power to decide whether they should control events by anticipating and planning for them or leave those matters to others when it was most probable that in ten, twenty or thirty years there would be so many varia-tions of the metric system that an intolerable burden would be imposed on their successors. The added burden to pharmacists could not be denied and indeed should be asserted, but profession we should be able to plan our professional activities in a chang-ing environment. This chance we now have; if we miss it we may find that it has been done by others to our own loss. Indeed, the continually increasing need for closer international cooperation is likely to lead to a change to the metric system supplanting national systems of weights and meas-ures in many other commercial fields. Because pharmacists, of all those supplying the public, have the most scieniffic training, it is likely that the way in which we deal with our own prob-lems will be closely examined and, if well conceived, will be accepted as the basic pattern."

Pharmacists' Problems the Hardest

Dr. Capper finally stated "I have detailed the difficulties I have been able to foresee and have suggested methods for dealing with some of them. In doing so I have concentrated principally on the problems of the retail pharmacist because these seem to me the most varied and the most diffi-cult to solve. The hospital pharmacist will share some of these problems and the manufacturer of standard preparations must face the prospect that the composition of many of these will be altered. I have put forward a plan to cover the final stages of the changeover from the apothecaries' system of weights and measures to the metric system. There are probably additional difficulties, better answers and a soun-

der basic plan. I hope that the discussion which follows will reveal these."

Commenting on his paper, Dr.

CAPPER said that when he had first planned it he had thought he could deal fairly simply with the subject. He had not then realised that British pharmacists had been interested in the problem of the metric system for 100 years or more. It would be inappropriate not to mention the Newcastle pharmacist Barnet Proctor. Dr. Capper had not been able to find the text of Proctor's paper given in 1863, but the text of the one he gave in 1864 was available.

Proctor was not enamoured of the metric system, but preferred one based on a system of eights.

Dr. Capper stressed that pharmacists would need complete protection in law to cover them when dealing with the D.D.A., Foods and Drugs and similar legislation. There would be need for adequate time to clear stocks during a transition period of changing from one system to another. It was hoped that analysts who checked samples during the transition period would display a reasonable attitude to the many problems. The medical profession must be fully informed as to what was happening. And the Ministry of Health must be "in on the change." Pharmacists had themselves to do some-thing about the problems. They must be thinking about it now and not leave it until the changes were actually Another matter concerned occurring. the problem of the availability of bottles suitable for dispensing metric quantities. "If a customer is given a medicine in a bottle that is not completely full, it's no good saying it has been shaken down since it was dispensed! Your customer might suggest you top it up with a double gin.

Before the discussion was thrown open, MR, T. C. DENSTON outlined the attitude of the British Pharmacopæia Commission to the problem. The apothecaries' system, he said, had only a limited application in the British Pharmacopæia, all analytical procedures being in the metric system. The Commission felt that when the B.P. "went metric" the B.P.C. and B.N.F. should do likewise. It would be necessary to cover the position that arose when no strength was stated on a prescription and when the doctor used apothecary units. Furthermore the Commission had very much in mind the problem of duplication of stocks. The transition period must be longer than the period of six months normally allowed when changes were introduced in the British Pharmacopœia.

Discussion

Using the simile that when one went to the Continent one immediately had to drive on the other side of the road, Dr. G. F. Somers made a strong plea for an abrupt change to the metric system. Doctors could be educated to the new system by being issued with scales of equivalents and, from the chemist's point of view a "good clearout" would not hurt many establishments. 50 per cent. of prescribing was of proprietary preparations which were in the metric system, and he thought that there should be no difficulty in dealing in that system with the remainder of prescribing.

Doctors should be informed of the details of the control of the

details of the changes, and chemists, for their part, must be prepared to fall

in with the new system.

MR. K. HOLLAND, Romford, disagreed with Dr. Somers. He considered that to try to fit the older mixtures into the newer type of dose was going against the comfort of users. Doctors would continue to write prescriptions in eight, twelve and even thirty-two ounce quantities and he could not see why they should not continue as Dr. Capper had suggested. The mixtures were old-fashioned anyway. Why not have them in the old form?

Dr. Capper suggested that Dr. Somers had fallen a victim to his own imagery. There was no point, he declared, in making up a mixture containing, say, nux vomica, in the metric system when it had been dispensed satisfactorily for a hundred years on the apothecary system. Although it might suit a manufacturer to recommend clearing out stocks, what was wanted were suggestions as how to get a plan of campaign settled.

MR. G. RAINE, speaking on behalf of teaching-hospital pharmacists, said the pressure for the change to metric came from the teachers of medicine. If pharmacy were to be considered a scientific profession then pharmacists must be prepared to adopt the system. The association would like a discussion as soon as possible about dose volumes for liquid medicines. He would like to suggest 5 mils for the small dose and 20 mils for the larger. His association hoped that tablets would be standardised in 20- and 50-mgm. strengths, not in 30- and 60-mgm. Mr. Raine thought pharmacists must be prepared for a certain amount of inconvenience to get over the initial difficulties of the metric system.

Non-official Products

MR. W. GORDON HOLLIS, London, asked whether Dr. Capper envisaged any change in legislation that would prevent non-official products being described in apothecary units. Dr. CAPPER assured Mr. Hollis that the legal requirements for describing the formulas of non-official drugs would be altered only if the Board of Trade decided to follow the recommendations of the Hodgson committee.

DR. T. D. WHITTET emphasised that the initiative for the transfer to the metric system came from the professors and teachers of medicine, and that if pharmacists continued with the apothecaries' system medical students would consider pharmacy archaic. He him-self had written to fifty doctors who had been trained on the metric system at his hospital. All who had replied had attempted to continue to prescribe in that system, but most had, for "old" drugs, been forced to give it "old" drugs, been forced to give it up. Eleven, including a number of general practitioners, had persevered with the metric system. Most of them were in hospitals but five were in general practice. Practically all doctors replying had met opposition from nursing staff, and all except one spoke of co-operation from chemists. Dr. Whittet had found that, whereas in France and Spain volumes used were 30, 90, 120, and 240 mils, in Portugal, Denmark and Sweden 25, 50, 75 and 100 mils were used as bottle volumes. The speaker made a plea to his hearers to think rationally in the metric system and adopt the appropriate dose units, 60 mgm. was merely an apothecaries' unit transferred.

MR, G. W. HORSLEY, Harrow, putting "the point of view of the people who bear the brunt—the small retailers" wanted to know if it was intended to amend the Dangerous Drugs Act to allow 30-mgm. tablets of morph. sulph. instead of 1 ar

instead of ¼-gr.

MR. A. H. Dyson, Birkennead, suggested that pharmacists should wait

until legislation was enacted-with a twelve-month delay during which the public could be educated to order "by the 500 gm., and not the sixpenny-

worth."

MR. W. HAIGH, Newcastle, said that as Clerk to the National Joint Pricing Committee, he would like to see the change to metric system now. He asserted that the professions were already in the transitional stage. He had been able to see how essential it was for doctors to be fully informed on prescribing in metric units—confusion could so easily arise over the misplacing of the decimal point, the writing of gm. for mgm., and, at present, confusion between "g" and "gr."

MR. J. D. WIMBORNE, Wanstead, feared the slavish adherence to the tea-

feared the slavish adherence to the teaand tablespoonful doses, and put for-ward the idea of a standard measure. MR. H. E. BROOKS, Nottingham, believed the difficulty would be educating

the public.

MR. A. W. CLARK (a bottle manufacturer) pointed out that, although a doctor had prescribed in teaspoonful doses, the great British public had used teaspoonfuls that were about 20 per cent. greater in capacity. That situation would probably continue to exist. Although the present 8-oz. bottles contained sixteen doses, the housewife might get only twelve doses out of it. On an automatic bottle-making machine it cost £750 before a new bottle could be made, and it was necessary to produce 2,000 to 3,000 gross as a minimum economical quantity. It might be possible to use existing bottles if 15-mil doses were adopted and fifteen doses were given instead of sixteen.

MR. S. DURHAM, Sheffield, suggested that there was a danger of a chronic patient's being tempted to take an overdose if he suspected that the metric tablets were not quite the equivalent of those in the apothecaries' system to which they had been accustomed. He suggested that a 20-dose bottle should be made standard in the British National Formulary.

Too Pessimistic?

MR. J. C. HANBURY, Ware, thought that Dr. Capper had been unnecessarily pessimistic in his conclusions as to what could be achieved quickly. He believed that if the General Medical Council, the British Medical Association, and teachers of medicine were virtually unanimous, the general practitioner (who was usually too busy with his patients to think about measure-ment details) could be expected to follow. The same applied also to the pharmaceutical profession now that their elected representatives were also virtually agreed on the change. A red herring had been drawn across the track, being the failure to distinguish between what could be achieved soon, and what would take longer. He urged that formulas and formulations should be adjusted so as to be logically right in the metric system, and then published in the B.P., B.P.C., and B.N.F. There would be no difficulty in making those preparations. The publication of those books in the metric system should not be prejudiced by fears that it might be a generation before doctors. it might be a generation before doctors ceased prescribing those mixtures in

8-oz. quantities.

DR. CAPPER was sure that all the representatives of the various bodies concerned had not really considered every point of view when studying the problems. For example, he did not believe the leaders of the medical profession were aware of the difficulties presented by containers. He thought the earliest the changes affecting liquids would be convenient would be 1968. If, however, the dates of publication of the official standards were delayed then possibly an earlier date might be achieved.

MR. J. KUDISH, Finchley, asked if the contents of a screw cap of a bottle

could be standardised.

MR. G. R. WILKINSON, Potters Bar, suggested that there was no need for the patient to know how much he was required to take. He supported Mr. Kudish in suggesting that plastic measures could be cheaply made.

MR. H. RIDEHALGH, Bournemouth,

deprecated the idea of a cap measure -modern medicines were potent. Now was the time to produce a satisfactory measure. He thought that the changeover should be speedier than that pro-

posed by Dr. Capper.

PROFESSOR A. D. MACDONALD, Manchester, speaking "as one of those accused of misleading doctors," said that one had to get away from think-ing in terms of halves and quarters. A measure of 0.25 was bad, for it was seldom that medicine was measured to an accuracy of the second decimal place. Measures of 0.2, 0.5 and 1.00 were to him in his undergraduate days forty years ago, and it was depressing to hear it suggested that it would be ten years before the system would be adopted completely. He urged that the change should be effected at the same time for external preparations and for tablets and capsules.

Mr. H. HUMPHREYS JONES said that all were agreed that the metric system was coming, and unfortunately the voluntary system had been a failure. It seemed to him that the Pharmaceutical Society and British Medical Association should have "sufficient activity to

ensure the change by 1968.'

SCIENCE SESSIONS

Meetings held concurrently

MR. TREVES Brown opened session A of the science session on Monday afternoon, September 5, by asking Mr. F. NEWCOMBE to read the first paper:—

Alkaloids of Voacanga Schweinfurthii Stapf

I. VOACAMINE AND VOBTUSINE

F. FISH, F. NEWCOMBE and J. POISSON Two alkaloids, voacamine and vobtusine, have been isolated from the stem bark of *Voacanga schweinfurthii* Stapf (Apocynaceæ).

(From the School of Pharmacy, Royal College of Science and Technology, Glasgow, and Faculty of Pharmacy, University of Paris)

Discussion

MR. TREVES BROWN asked if the alkaloids had been tested pharmacologically. Mr. F. Newcombe stated that



Mr. F. Newcombe who was first to present a paper at section A of the science sessions.

Schweinfurthii had not been so tested but Africana, containing the two alkaloids mentioned in the paper, had been so examined DR. G. E. FOSTER queried the empirical formula. Had the authors tried analysis by paper chromatography. His colleagues had been unable to confirm the cardiotonic properties of the alkaloids. Mr. Newcombe agreed that the formula had not been confirmed and admitted the discrepancy in the results in respect of the carbon content. Pharmacological activity had not been tested by the authors themselves. They had accepted the work of others.

DR. F. FISH stated that the French workers were satisfied they had indeed separated the alkaloids. He agreed the carbon results were suspect. He did not consider there were commercial possibilities in the alkaloid owing to the small quantities involved, Dr. J. M. ROWSON stated that crude screening tests on Africana had shown cardiac action. Mr. C. A. Johnson, Nottingham, asked if anything was known of the general structure of the alkaloids and was informed that work indicated an indole type. Mr. J. J. Lewis, Glasgow, asked what techniques had been

used to demonstrate cardiotonic activity.

Dr. Foster: "I think the ventricle preparations were used." Mr. Cowan, Brighton, asked if the authors had any theories about the functions of the alkaloids in the plant.
"No." The answer was

The second paper was read by MR. S. SIMIC, Jugo-Slavia and London.

Purgatives Containing Anthracene Derivatives

XI. FURTHER WORK ON THE ALOIN-LIKE SUBSTANCE OF Rhamnus purshiana J. W. FAIRBAIRN and S. SIMIC

THE aloin-like substance formerly referred to as compound A₁ has been resolved into four closely allied anthra-

quinone derivatives by paper chromatographic and countercurrent tech-niques. Two of the substances have been isolated in pure state and their general properties, melting point, optical rotation, R_F values and ultra-violet light absorption curves are recorded. Treatment with ferric chloride yields aloe-emodin from both, and each, on mild hydrolysis, produces barbaloin. The names cascaroside A and cascaroside B are proposed. Preliminary work on the other two components has shown that they are based on a compound similar to barbaloin but a derivative of chrysophanol instead of aloe-emodin; the name chrysaloin is suggested for that substance. Resolution of the original compound A into the two major components referred to explains the fact previously reported that compound A on treatment with ferric chloride yields aloe-emodin and chrysophanol.

(From the Department of Pharmacognosy, School of Pharmacy, University of London)

Dr. E. J. SHELLARD suggested that the term cascarolide would have been preferable.

PROFESSOR J. W. FAIRBAIRN considered that the terminology was satisfactory since both cascarosides A and B were glycosides yielding glucose on hydrolysis.

DR. A. H. BECKETT asked at what pH the ultra-violet readings were taken. PROFESSOR FAIRBAIRN replied that in both instances it was pH 6. DR. FOSTER asked what work had been done regarding the purgative action of the compounds. PROFESSOR FAIRBAIRN stated that, like aloin, the compounds had no effect on mice, but they hoped to institute work using rats.

MR. P. S. COWLEY read the third paper of the session.

Studies in the Genus Digitalis

II. ANATOMY OF THE INFLORESCENCE OF Digitalis lanata
P. S. COWLEY and J. M. ROWSON

THE morphology and detailed anatomy of the inflorescence of Digitalis lanata are described. The diagnostic characters which are the most valuable in identifying the inflorescence in admixture with the leaf are the abundance of glandular trichomes; the pollen grains; the sclerenchymatous fibres and lignified pith of the pedicel and stem; also the lignified cells of the anther, fruit wall and seed coat. Those characters which distinguish the inflorescence from that of D. purpurea are noted.

(From the School of Pharmacy, Brighton Technical College, and Pharmacy Department, Nigerian College of Technology, Ibadan)

DR, T. E. WALLIS suggested that mention should be made of the fact that the seeds varied much in shape from trapilloid to nearly ovoid. He asked if the authors had mixed powders of the two flowers and if he could pick out the characteristics of the *lanata* as being good ones for determining their presence in the mixture. MR, Cowley replied that he had mixed an inflorescence with the leaf, but not the two inflorescences. DR, F, FISH suggested that the very fine reticulations on the

surface of the pollen grain might also have been mentioned. He asked if the glycosidal content of the inflorescence could be given. Dr. Rowson replied he felt sure that the figure was fairly low except in the actively developing young flower. Mr. T. D. Turner, Cardiff, suggested it might have been better to standardise the type of measurements adopted in the paper.

The next two papers were taken together and read by Dr. J. M. Rowson.

Studies in the Genus Digitalis

VI. VARIATIONS IN GLYCOSIDAL

CONTENT OF BRITISH CLONES OF Digitalis purpurea J. M. ROWSON

SEEDS of wild Digitalis purpurea from 150 different areas in twenty counties of Great Britain have been collected; the weight of 100 seeds was 3.5-8.6-11.6 mgm. Each batch of seed, regarded as a clone, was grown under uniform conditions and leaf collected from both first-year and second-year plants. Glycosidal content of each leaf sample, drawn from eight plants within the clone, was estimated using 3,5-dinitrobenzoic acid, and results expressed as u./gm. by comparison with the standard preparation of prepared digitalis. Values for clones were: first year 9.8-13·7-18·9 u./gm.; second year 3·1-7·6-11·4 u./gm. Clone values for dried leaf yielded per plant were: first year 38-79-137 gm.; second year 12-23-47 gm. The weight of parent seed does not affect the yield of leaf or its activity (first year); nor is leaf activity affected by leaf yield (first year). A positive relation exists for first and second-year leaf activity values for each clone, suggesting genetical control of The total glycosidal content shows wide variation about the mean for each year's crop. A comparison of the potencies of first-year leaf with the geographical origin of the parent seeds is set out in a table. There is no clear evidence that one county produces digitalis of higher activity than another and the evidence is rather of random distribution within natural variation in each county. Comparison of activity of first-year leaf and the ecological habitat of the parent also



Mr. C. B. Young, Whitley Bay, tells Miss B. H. Norris, New Zealand, of some interesting places to visit while in the North-east of England.

showed no correlation. Despite the low potencies of second-year leaves there is a correlation of them and the activity of the first-year crop from the same clone. The author thanks Miss F, L. C. Blackwall for all the cultivation work.

(From the Museum of the Pharmaceutical Society of Great Britain and Pharmacy Department, Nigerian College of Technology, Ibadan, Nigeria)

Studies in the Genus Digitalis

VII. VARIATIONS IN GLYCOSIDAL CONTENT WITHIN CLONES OF

Digitalis purpurea
J. M. ROWSON

FIRST-year leaves of Digitalis purpurea, collected in July or August, contain smaller amounts of glycosides than those collected in September, October or early November when the values are relatively constant, with a coefficient of variation of about 7 per cent. Second-year leaves contain uniform amounts of glycosides until the plant is in full flower (coefficient of variation about 8 per cent.), after which glycosidal content decreases. Weight of leaf per plant increases throughout the first year of growth; it is less for secondyear plants and reaches a maximum in the early stages of flowering. Deflora-tion of second-year plants changes the accumulation pattern of glycosides to that of first-year plants. Coefficient of variation in glycosidal content within groups of up to ten plants in one clone was 9.4 per cent, for first-year plants, 13.3 per cent, for second-year plants. It is concluded that leaves collected from September onwards contain a normal percentage of glycosides; whereas commercial harvesting should take place as late as possible when the crop weight is at its maximum. Second-year plants should be harvested when in early flowering; although commercially the crop yield and glyco-sidal content are both lower than for first-year plants. Though previous work showed that glycosidal content could not be much influenced by either manurial treatments or by starvation, the site of cultivation influences that content and it has been suggested that that is an influence of climate rather than of nutrition

(From the Muscum of the Pharmaceutical Society of Great Britain and Pharmacy Department, Nigerian College of Technology, Ibadan, Nigeria)

DR. Wallis asked whether any indication could be given, when it was best to collect the drug, and what were the best conditions for growing it. The B.P. had at one time insisted on the collection of digitalis leaves from second-year plants, but it appeared better to have first-year leaves.

DR. Rowson agreed that the average potency of a second-year leaf was about half that of the first-year leaf. No grower of digitalis would collect the leaf from the second was plant.

from the second-year plant.

DR. FISH asked whether the author noted the percentage germination increased with an increase in weight of the seed. DR. ROWSON indicated he had not done any work on that aspect, but he would investigate that aspect fur-

ther. Dr. SHELLARD inquired if there were any figures for weight of leaf of

defoliated plants.

DR. ROWSON thought the yield was about the same. DR. FAIRBAIRN emphasised the importance of sample methods in that type of work. He referred to his own findings concerning the alkaloids of hemlock, and suggested that Dr. Rowson should investigate possible changes in the development of digitalis flowers in view of the marked effect of flowering on the glycoside in the leaf.

The first two papers taken at section B of the science sessions, which was under the chairmanship of Professor

Linnell, were: -

Strength of Compressed Tablets

I. MEASUREMENT OF TABLET

STRENGTH AND ITS RELATION TO COMPRESSION FORCES E. SHOTTON and D. GANDERTON

A MOTORISED single-punch eccentric tablet machine has been fitted with instruments to measure the forces operating during the compression cycle. Apparatus has been designed to measure the resistance to crushing of the final compact. Sodium chloride was compressed at varying pressures and the relationship between compaction forces, ejection force, strength and voidage investigated. Tablets were prepared at a constant rate of sixty-eight tablets per minute, and at each pressure-level feed conditions were allowed to stabilise by rejecting the first ten tablets. The succeeding twelve tablets were then collected and individually weighed. Within the test range, the directional distribution of forces probably remains the same, with a constant proportion being transmitted to the die wall. Above 1,000 kilos per sq. cm., a higher fraction of the applied force was transmitted to the die wall. The authors thank Dr. Train and the Distillers Co., Ltd., for apparatus.

(From the Department of Pharmaceutics, School of Pharmacy, University of London)

II. Bonding of Granules During Compression

E. SHOTTON and D. GANDERTON

THE deformation of tablet granules has been followed over a wide pressure range by preparing and compressing sucrose granules with coloured surfaces. By examination of the fracture of the compacts in a strength test, it has been possible to determine the structural rôle of the granule at these pressures. Tablets were produced at five pressure levels with eight tablets in each series. The relation between porosity and crushing force is found to be linear over the observed range, suggesting that there is no sharp transition from one mode of behaviour to another. Also, it may be concluded that the decrease in voidage due to packing is largely complete in the tablets produced at even the lowest pressures. The authors thank Mr. D. R. Felstead (Barratt & Co., Ltd.).

(From the Department of Pharmaceutics, School of Pharmacy, University of London)

The papers were read by Mr. Gan-DERTON. Introducing him, PROFESSOR



Mr. D. Ganderton presents his paper at the science sessions.

LINNELL said that the hope of the authors in presenting such a paper was that eventually the empiricism of tablet making would be replaced by a more logical approach. A point made by Mr. Ganderton in reading the paper was that the tablets were found to show differences of strength not related to differences of pressure.

Discussion

MR. D. STEPHENSON, Dartford, congratulated the authors on an ingenious approach that should lead to many more papers. He made the observation that the solid particles used in making the tablets were non-porous, Had any work been done on porous granules as used in industry? Had they studied the effects of variations of particle size? The reply, given by Mr. Ganderton, was that both points were under consideration, but no work had yet been done on them.

MR, D. FEARNLEY, Colchester, asked whether the dyes used did not insulate granule from granule and inhibit bonding. The reply was that they might, but without them the observations could

not have been made.

MR. K. W. HARGROVE, Chester, said that the papers would start off a train (not Train) of fundamental research that was needed. In tablet making there were two things to do—compact and expel air, both affected by variation of speed. Had any work been done on that? The pressures involved, he suggested, in the single-punch machine used must be very difficult from those of a multi-punch machine.

MR. GANDERTON said that the speed question had not been dealt with. The tablets had been made at a constant speed and the rest was subject matter for future work. Unfortunately the department had no rotary machine; the answers would be found by instrumenting a rotary machine. PROFESSOR SHOTTON said the paper dealt with physical properties and their effect on compression. A plan of further studies would cover some of the other points raised and should give a better insight into problems of adhesion. A rotary machine would be welcomed by the de-

partment; he thought it could be instrumented like the single-tablet machine.

MR. N. BURLINSON, Ashton-under-Lyne, who asked about the moisture content of the sugar granules, was informed that it was about 2 per cent., and MR. ROGERS, Brighton, was told that the degree of variation was of the order of 210-20 for a mean of 216 in the recorded figures.

MR. R. L. STEVENS, Rugby, asked whether, in view of the tendency of tablets to harden, they had been tested at once or later; the answer was with

but slight delay.

MR, M. J. GROVES, Ware, was informed that no study had yet been made of the effect of lubricants on the results obtained, and that as the same sample of sodium chloride had been used throughout, variations of moisture content and their effect had not been considered.

The next paper was:—

Laminar Lubricants in Compaction Processes

D. TRAIN and J. A. HERSEY
A PUNCH penetration shear test was used to support the theory of orientation of layers within the crystal lattice as the lubricating mechanism of laminar solids. Under high applied loads, this orientation was prevented, thereby causing a high value of the shear strength. The increased shear strength was manifest in an increased coefficient of friction under high loads, as found experimentally in the die pressing of solid plugs of tale and graphite. The use of those solids as lubricants in compaction processes could not be justified at high constraining loads, where the relative density of the compact was high.

(From the Department of Pharmaceutics, School of Pharmacy, University of London)

It was read by Dr. Hersey.

Discussion

MR. D. STEPHENSON, Dartford, inquired when the roll formation took place, and suggested that, if it occurred during compression, the rolls might subsequently, on the upstroke of the punch, act in the reverse direction. In his experience micronised talc was a better lubricant that the unmicronised material.

Replying, Dr. Hersey said that relative movement was necessary to produce the rolls. Although that movement might occur during micronisation, the rolls would be unlikely all to lie in the same direction. The answer to Mr. Stephenson's problem, he thought, was that, after compaction, there would be

a tendency to unroll.

DR. D. TRAIN added that their work had followed observations by others that, whereas a good lubricating effect could be produced when relative movement was in one direction, on reversing that movement an increase in reaction was produced, which suggested an unravelling of the "Swiss rolls" and a rolling up again. In future, time and space would have to be taken into consideration when using laminar lubricants.

The next paper, read by Mr. Wibberley, was:—

Emulsifying Properties of Acacia

E. SHOTTON and K. WIBBERLEY

THE quantity of potassium arabate required to stabilise as an emulsion a known volume of a hydrocarbon oil has been determined and an estimate has been made of the dimensions of the interfacial film. The gum acacia remaining in the washed emulsion is held strongly at the oil/water interface and is not yielded to the bulk of the aqueous phase. An attempt was made to determine whether acacia is adsorbed at the oil/water interface in equilibrium with the bulk solution or if it is irreversibly adsorbed. If it is in equilibrium repeated washing of the emulsion should cause the destruction of the emulsion as the gum is removed from the system, Benzene emulsions could be washed several times without obvious change but after the fourth cycle the emulsion began to crack. Cyclohexane emulsions were more stable, no sign of cracking appearing until the seventh washing; even after the fourteenth the bulk of the emulsion remained. A heptane emulsion did not show any sign of deterioration after the seventh washing, and a light liquid paraffin emulsion was stable after ten washing cycles. If the concept of an isodiametric molecule be accepted it becomes possible to speculate about the dimensions of the interfacial film in the heptane emulsion. One case fits the required dimensions of a monolayer of an isodiametric mole-cule very well. The remaining examples tend to support the hypothesis. The interfacial film of acacia cannot be removed by considerable dilution of the aqueous phase, which seems to indicate that the adsorption of a monolayer is not an equilibrium process.

(From the Department of Pharmaceutics, School of Pharmacy, University of London)

MR. K. A. LEES, Greenford, congratulated the authors on their elegant techniques. He assumed that after seven washings the acacia left was the minimal amount required for a stable emulsion. Would the authors expect that using a more efficient emulsifier upon the washed product would take the stability to a further level?

DR. L. SAUNDERS, London, asked whether the molecular weight of acacia was not liable to vary. Would it not be useful to determine the M.W. of each sample, possibly by a light-scattering technique? The reply was that on the molecular weight of acacia there was fairly general agreement, the only discordant voice coming from one who had used a light-scattering technique.

The next paper, read by Mr. White, was:—

Rheology of Acacia-stabilised Emulsions

E. SHOTTON and R. F. WHITE

THE flow behaviour of emulsions of benzene and two paraffin oils in acacia solutions has been examined. The concentration of acacia had little effect on the relative viscosity, and the viscosity of the oil none. Emulsion viscosity increased with the volume fraction of oil which also led to an increased deviation from Newtonian flow. Evidence of thixotropy was not found in

these emulsions. The chemical nature of the oil has a great influence on the viscosity and the differences are explained in terms of the characteristics of the interfacial film.

(From the Department of Pharmaceutics, School of Pharmacy, University of London)

Discussion

MR. A. Axon, Dartford, commented that all the measurements seemed to have been done with a rotational viscometer measuring a high rate of sheer. The literature suggested that a low rate of sheer gave a more accurate result. The author replied that it was difficult to know what sort of viscometer to use in such tests. MR. N. J. VAN ABBE, Loughborough, said the question was whether, with a high rate of sheer, the character of the emulsion had not changed, but MR. WHITE said the authors thought not: the particles were probably distinct; there was no reduction in size.

The next paper, read by Dr. T. D. Whittet, was:—

Stability of Solutions of Phenylephrine

G. B. WEST and T. D. WHITTET

It was noted in hospital practice that solutions of phenylephrine (10 per cent.) became yellow or pink within a few weeks of issue in 15 mil ambercoloured eye-drop bottles, and sodium metabisulphite (0·1 or 0·2 per cent.) did not prevent the discoloration. Although colour changes were not necessarily a guide to changes in biological activity attempts were made to prepare solutions which would remain colourless. The results confirmed the observation that solutions of phenylephrine colour on oxidation but the amount of colour was no indication of the decrease in activity. Sodium meta-bisulphite delayed the colour formation but disodium edetate (0.1 per cent.) was better. The protective effect of edetate was believed to be due to its chelating power (on metals such as iron and manganese, two constituents of amber glass) but it also exerted an antioxidant effect. Disodium edetate antioxidant effect. Disodium edetate was harmless to the eyes and was therefore recommended as the preservative for solutions of phenylephrine (10 per cent.).

(From the Department of Pharmacology, School of Pharmacy, University of London, and The Pharmaceutical Department, University College Hospital. London)

Discussion

Replying to Dr. J. C. Parkinson, Brighton, Dr. Whittet said that disodium edetate produced the same effect with adrenaline and also with a wide range of other compounds. He told Mr. A. H. Fenton, Nottingham, that although a 1:10,000 concentration of disodium edetate had a considerable effect, it did not guarantee stability. But if the concentration were lowered to 1:100,000, there was little protection. He agreed with Mr. Fenton's suggestion that the compound might be better described as a "stabiliser" than as a "preservative." Dr. Whittet added that there were probably several causes of deterioration, because if solutions of phenylephrine in white bottles were exposed to sunlight discoloration occurred. If, however, they were stored in completely full white bottles in the dark they remained unaltered for a long time.

Replying to Professor G. Brownlee, London, who had drawn attention to the finding that phenylephrine solutions, although black in colour, retained their biological activity, Dr. G. B. West said that, if only a small proportion of the compound had been oxidised, it could not be detected by the methods used.

DR. A. H. BECKETT, London, suggested that the fact that the solution maintained its activity after much oxidation had taken place indicated that an active decomposition product had been formed.

DR. WEST pointed out that when they had used a 0·1 per cent. solution and had obtained a black precipitate, a loss of activity had been noted. However, they were investigating the possibility of an active decomposition product being present.

duct being present.

MR. R. L. STEVENS, Rugby, asked whether the authors had used ion-free water and had stored the solution in plastic containers.

DR. WHITTET replied that plastic bottles had not been used, but he was satisfied that chelation was not the whole answer.

He assured MR. VAN ABBE that disodium edetate was harmless when used in the eye, and told MISS M. D. SMITH, London, that no work had been done on stabilising eserine with edetate.

(To be continued)



Dancing at the civic reception on Monday evening.

NOTES ON NEW MEDICAMENTS

TENSIVAL.—Constituents: Hydrochlorothiazide and thalidomide, The newer and more powerful diuretics have therapeutic applications in the treatment of premenstrual tension, as the symptoms of that condition are frequently associated with a temporary degree of water retention. Some nervous stress is also common, and the inclusion of thalidomide, a mild sedative, permits control of both the physical and mental disturbances with a single tablet. Certain hormone products are also used for the relief of premenstrual tension, and include dimethisterone (Secrosteron), mestanolone (Androstalone) and allylestrenol (Gestanin).

FLAGYL.—Chemistry: 1-\(\beta\)-hydroxyethyl-2-methyl-5-nitro-imidazole, This substance, also known as metronidazole, has trichomonacidal properties. When given orally, effective concentrations are excreted in the urine, and following upon this, the drug has been used successfully in the treatment of vaginal trichomoniasis, It does not interfere with the normal acidophilic saprophytic organisms present in the vagina, and local therapy is not necessary. Earlier substances used as oral trichomonacides included Trichorad and Tritheon (acinitrazole), and Aroxine (forminitrazole), but clinical experience did not substantiate preliminary reports.

NILERGEX. — Chemistry: 10-(2-dimethylamino-propyl)-9-thia-1:10-diaza-anthracene hydrochloride, or isothipendyl. This compound is closely related to promethazine, as it has an additional nitrogen in the 1-position of the nucleus, the substituent side chain in the 10-position being identical. Like promethazine, it has antihistamine and allergic properties, but unlike many antihistamines, it has virtually no sedative action. This is an advantage for ambulant patients. Another example of a non-sedating antihistamine is phenindamine (Thephorin), but this drug has a mild stimulant effect in many patients.

LIBRIUM.—Chemistry: 7-chloro-2-methylamino-5-phenyl-3H-1,4-benzodiazapine-4-oxide hydrochloride. This psychotherapeutic agent, also known as methaminodiazepoxide, is soluble but unstable in water, and is chemically unrelated to other tranquillising or antidepressant drugs. Librium has a wide range of therapeutic activity. Although it has the calming action of chlorpromazine and reserpine in animals, the autonomic blocking action of those drugs is absent. It has a more powerful muscle relaxant action than meprobamate, and has anticonvulsant properties similar to phenobarbitone, but hypnotic effects are virtually absent. In rats and dogs the drug has an anabolic action, resulting in an increased appetite, which is an unusual property for a tranquilliser. More specific antidepressants are represented by imipramine (Tofranil) and the monoamine oxidase inhibitors exemplified by iproniazid (Marsilid), phenelzine (Nardil), nialamide (Niamid), isocarboxazid (Marplan) and β -phenylisopropyl hydrazine (Cavodil). The activity of Deaner, also used in endogenous depression, is due to the release of acetylcholine in brain tissue.

CYCLOSERINE with INH .- Chemistry: 4-amino-

Dolete

iso-oxazolidin-3-one and isonicotinyl hydrazide. Cycloserine is an antibiotic produced by selected strains of Streptomyces orchidaceus, or obtained by synthesis. It is a tuberculostatic compound, but its therapeutic value is limited owing to toxic reactions and the development of bacterial resistance. The toxic effects can be reduced by the use of smaller doses in association with other tuberculostatics, and combined therapy also checks the emergence of bacterial resistance. Administration of cycloserine with isoniazid has been stated to produce a more rapid clinical response, and to be more acceptable than combinations of the antibiotic with the necessarily larger doses of aminosalicylic acid compounds, Other combinations of tuber-culostatic drugs are: Pasinah, Pycamisan, Nisogen, B-Pasinah, Therazid and Thiasemipas.

DOLOXENE. — Chemistry: $[\alpha-(+)-4-dimethyl-amino - 1:2 - diphenyl - 3 - methyl - 2$ propionyloxybutane hydrochloridel also known as dextropropoxyphene hydrochloride. compound has a valuable but selective pharmacological action, as it is almost exclusively analgesic in effect. The general chemical structure is unusual, although fragments are present in a number of therapeutically active compounds, which may or may not have analgesic properties. In Doloxene Compound, the analgesic activity is augmented and supplemented by the addition of phenacetin and acetylsalicylic acid, and caffeine is included for its central effects. Other analgesic products of the more powerful type include D.F.118 (dihydrocodeine), Narphen (phenazocine), Palfium (dextromoramide), Physeptone (methadone) Pipadone (dipipanone).

DUROMORPH.—Constituent: Morphine alkaloid. The use of microcrystalline solids has certain advantages in the preparation of suspensions, and these advantages have been exploited in the formulation of various injection products. Such injections have a longer action than the corresponding soluble preparations, duration of activity depending largely on particle size. Duromorph is a preparation of this type, being an aqueous suspension of microcrystalline morphine. Another long-acting morphine preparation is Hyperduric morphine, in which the extended action is obtained by combining the alkaloid with mucic acid. Proladone is a long-acting analgesic injection containing oxycodone pectinate.

METASTAB, — Chemistry: 6-methyl-delta-1-hydrocortisone, or methylprednisolone. The newer corticosteroids represent attempts to dissociate the anti-inflammatory from the mineralocorticoid effects, as well as to increase potency. By this means undesirable effects such as salt and water retention are reduced, psychological disturbances and appetite stimulation occur less frequently, and a more specific action is obtained. Methylprednisolone is also available as Medrone. Other corticosteroids of high potency are represented by triamcinolone (Adcortyl, Ledercort), dexamethasone (Decadron, Dexacortisyl, Dextelan, Millicorten, Oradexon) and fludrocortisone (Florinef).

CORTOCAPS.—Constituents: Hydrocortisone and neomycin. Hydrocortisone has a powerful antiinflammatory action, but has no effect on the underlying cause of the inflammation. When this is due to infection, some antibacterial substance should also be used, otherwise the infection will spread even though the inflammatory reaction is checked. Neonycin is usually employed in this way, as its antibacterial range is wide, resistance is uncommon and sensitisation to the antibiotic is rare.

Other preparations for ear and eye infections that have similar constituents include Efcortelan N, Hydro-Adrycin and Nco-Cortef, Predsol-N, Hydromycin D and Codelsol contain prednisolone (either as soluble salt or suspension) with neomycin, Framycort 'ophthalmic' contains hydrocortisone with framycetin; and preparations of hydrocortisone with Chloromycetin are also available. Adrycin contains cortisone and neomycin, In Terracortril, hydrocortisone is associated with oxytetracycline and polymyxin.

SERPASIL-FSIDREX K.—Constituents.. Reserpine, hydrochlorothiazide and potassium chloride. Hydrochlorothiazide lowers the blood pressure in hypertension by its diuretic and salteliminating action, and possibly by an intrinsic hypotensive effect. It also potentiates the action of reserpine in hypertension, and the combination has a further potentiating action on the ganglion blocking agents, thus enabling reduced doses to be employed. Potassium chloride is included to offset the potassium loss that may accompany an increased excretion of salt during long-term therapy. Salupres has similar constituents; Rautrax "improved" contains rauwolfia root, hydroflumethiazide and potassium chloride.

GESTANIN.—Chemistry: 17α allyl, 17β hydroxy oestr-4-ene or allylestrenol. This substance is a synthetic steroid with a powerful and selective action as an oral progestogen. It has no oestrogenic, androgenic, gonad or adrenal suppressive action, does not cause salt and water retention, and has few side effects. This selective action permits long-term use throughout pregnancy. Other oral progestogens include ethisterone, dimethisterone (Secrosteron) and nor-ethisterone (Primulot N).

BIOCORTAR.—Constituents: Hydrocortisone acetate and lactose, Corticosteroids are of value in certain respiratory disorders such as hay-fever and bronchial asthma, but when given orally they may have undesirable systemic effects. These disadvantages may be eliminated if the drug is applied locally as a snuff, and Biocortar is formulated for use in this way. Pabracort is a similar product. Vasocort Spraypak contains hydrocortisone with nasal decongestants, and Hydrospray is formulated on similar lines but also contains neomycin. Cortibiotic Nasal Drops, Predsol-N Nasal Spray and Rhinocort contain prednisolone in association with antibiotics and decongestants.

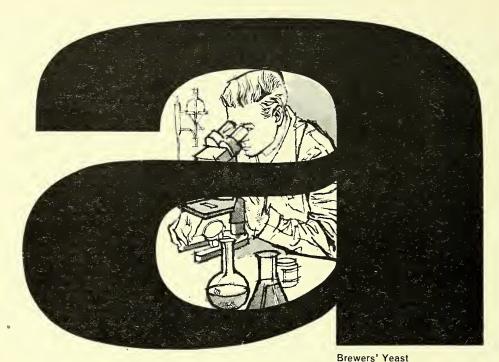
Correction.—DIOTRIN, Notes on New Medicaments (August 6)—should read DIOTROXIN.

CUMULATIVE LIST OF AMENDMENTS TO THE

C. & D. Quarterly Price List, September 1

THIS WEEK'S CHANGES ARE GIVEN SEPARATELY AT END

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	"Square 50"				159	6		
	Aldocorten (262 CIBA)	• • •	• • •		100	•	16 oz 083 46 3ea 22 6	ea 92 6
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	Amphetone (1348 JW) 10	oz 60	0					
	20	oz 108	0				⅓ oz 015 26 3ea 12 9	lea53 0
				• •				
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							refill ½ oz 015R 26 0ea 12 8	ea 52 6
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	100	300	0		37	6		ampoules 1·1 mil 6	81	0			9	0 DD
	Better Off (385 DG) tube for the face	66	0	33	0 11	0		Ekco (1377 Ekco) Ekcostat control					32	6
	for the legs	54	0	27	0 9	0		Endoxana (1305 WB)	• •			• •		•
	(distributors 621 Horlicks)	ı						tablets 50 mgm 50 250	$\frac{22}{100}$	0ea 0ea		• •	33 150	0 †s1s4A 0 †s1s4A
	0.25% 5 gm	40	0		5			vials 100 mgm 10	40	0ea			60	0 †s1s4A
	0.5% 20 gm 5 gm	64	0		16			200 mgm 10 Esslim (1158 Sodastream)	53	4ea		• •	80	0 †s1s4A
	20 gm	204	0		25			squash					2	0
	Carters (1003 PP) little liver pills 36	14	5	3	71 1	11		Fibrenyl (461 FL) throat spray	9	3		• •	1	2
	Cassandra (Weil) (960 ADP)	35	9	8	$7\frac{1}{4}$ 1 1 4	9		Floidam (900 Norton) lotion 3 oz	39	0	19	6	6	6
	ean parfumee . 2 oz 080	9	6ea	4	7½ea19	6		5½ oz	66	0	33	0	11	0
	4 oz 081 8 oz 082	$\frac{16}{26}$	6ea	8	0½ea33	6		Floidam Tan (900 Norton)	57	0	28	6	9	6
	16 oz 083	46	3ea 3ea	$\frac{12}{22}$	9½ea52 6ea 92	6		$5\frac{1}{2}$ oz	105	0	52	6	17	6
	perfume handbag 017 ‡ oz 016	7	9ea 9ea	$\frac{3}{7}$	9ea 16 2ea 30			Freshman (876 MP) aftershave	21	0	10	6	3	6
	½ oz 015	$\frac{14}{26}$	3ea	12	9½ea53			Gone Tan	33	0	16	6	5 2	6
	1 oz 014 2 oz 013	42	0ea	20	6ea 85			hairfix refill	15 7	0 6	$\frac{7}{3}$	6	1	6
	handbag coffret SE	$\frac{75}{15}$	0ea 9ea	$\frac{36}{7}$	6ea 150 8ea 32			aerosol	45	0	22	6	7	6
	"Secret de Venus" bath oil bobines . 12 060	50	000	24				shampoosponge-on deodorant	$\frac{17}{31}$	0	4	3	2	6
	bobine 1 060	4	0ea 3ea	$\frac{24}{2}$	4½ea 10 0½ea 8			refill	$\frac{13}{21}$	6	3	$\frac{4\frac{1}{2}}{6}$	2	0
	1 ag000D	90						talcum					3	6
	½ oz060B	$\frac{20}{27}$			1ea 42			Furamide (143 Boots)	21	U	10	Ü		
	1 oz 061 2 oz 062	37 67		$\frac{18}{32}$		0		tablets 15	69	0	17	0	10	0
	1 oz 061 2 oz 062 4 oz 063	37	6ea	18	1ea 42 3ea 75	0		Anhlote 15		0	17			0
	1 oz 061 2 oz 062 4 oz 063 Ceelite (315 Crater) electric blanket control	$\frac{37}{67}$	6ea 6ea	$\frac{18}{32}$	1ea 42 3ea 75 11ea135 2ea255	0 0 0		tablets	69 76 18	0 7ea 6ea	17	0	134	9
	1 oz 061 2 oz 062 4 oz 063 Ceelite (315 Crater) electric blanket control with neon	$\frac{37}{67}$	6ea 6ea	$\frac{18}{32}$	1ea 42 3ea 75 11ea 135 2ea 255	0 0 0		tablets 15 250 Gestanin (917 Organon)	69 76	0 7ea	17	0	134	Ō
	1 oz 061 2 oz 062 4 oz 063 Ceelite (315 Crater) electric blanket control with neon	37 67 127	6ea 6ea 6ea	18 32 62	1ea 42 3ea 75 11ea135 2ea255 8 10	0 0 0 9 6		tablets	69 76 18 52 13 38	0 7ea 6ea 0ea 6	17 19 6	0 1½ea	27 78 2 4	9 0 3 9
	1 oz 061 2 oz 062 4 oz 063 Ceelite (315 Crater) electric blanket control with neon Ceetherm (315 Crater) electric blanket control Check (665 JS) cream 271	37 67 127	6ea 6ea 6ea	18 32 62	1ea 42 3ea 75 11ea135 2ea255 8 10 29 5 2	0 0 9 6		tablets	69 76 18 52 13	0 7ea 6ea 0ea 6	17 19 6	0 1½ea 9	27 78 2	9 0 3
	1 oz 061 2 oz 062 4 oz 063 2 oz 062 4 oz 063 063 063 063 063 064 064 065 065	37 67 127	6ea 6ea 6ea	18 32 62	1ea 42 3ea 75 11ea135 2ea255 8 10 29 5 2	0 0 9 6		tablets	69 76 18 52 13 38 27	0 7ea 6ea 0ea 6 9	17 19 6	0 1½ea 9	27 78 2 4 3	9 0 3 9
Delete	1 oz 061 2 oz 062 4 oz 063 4 oz 063 Ceelite (315 Crater) electric blanket control with neon	37 67 127 14 22	6ea 6ea 6ea	18 32 62	1ea 42 3ea 75 11ea135 2ea255 8 10 29 5 2 0 3	0 0 9 6		tablets	69 76 18 52 13 38	0 7ea 6ea 0ea 6	17 19 6	0 1½ea 9	27 78 2 4	9 0 3 9
Delete	1 oz 061 2 oz 062 4 oz 063 2 oz 063 4 oz 063 Ceelite (315 Crater) electric blanket control with neon Ceetherm (315 Crater) electric blanket control Check (665 JS) cream . 271 spray . 269 Chesties (1215 Teasdale) 5 lb Chilton (257 Chilton) 5 lb Acculux rechargeable torch	37 67 127 14 22	6ea 6ea 6ea	18 32 62	1ea 42 3ea 75 11ea135 2ea255 8 10 29 5 2 0 3 1114	0 0 9 6 6 0 9		tablets	69 76 18 52 13 38 27	0 7ea 6ea 0ea 6 9 0	17 19 6 28 22	0 1½ea 9 0	134 27 78 2 4 3	9 0 3 9 0
Delete	1 oz 061 2 oz 062 4 oz 063 Ceclite (315 Crater) electric blanket control with neon	37 67 127 14 22 3	6ea 6ea 6ea 0 8 4	18 32 62	1ea 42 3ea 75 11ea135 2ea255 8 10 29 5 2 0 3 1114	0 0 9 6 6 0 9 6		tablets	69 76 18 52 13 38 27 57 45 33	0 7ea 6ea 0ea 6 9	17 19 6 28 22 16	0 1½ea 9 0	134 27 78 2 4 3	9 0 3 9 0
Delete	1 oz 061 2 oz 062 4 oz 063 Ceclite (315 Crater) electric blanket control with neon Ceether (315 Crater) electric blanket control Check (665 JS) cream . 271 Spray . 269 Chesties (1215 Teasdale) Chilton (257 Chilton) Acculux rechargeable torch illuminated magnifier angle holder Acculus	37 67 127 14 22 3	6ea 6ea 6ea 0 8 4	18 32 62	1êa 42 3êa 75 11êa 135 2êa 255 8 10 29 5 2 0 3 111 42 12 12 10	0 0 9 6 6 0 9 6		tablets	69 76 18 52 13 38 27 57 45 33 11 10	0 7ea 6ea 6ea 6ea 6 9 6 3 3 6 6 6	17 19 6 28 22 16 2	0 1½ea 9 0 1 3 10 7½	134 27 78 2 4 3 9 7 5	9 0 3 9 0 6 6 6 6 6
Delete	1 oz 061 2 oz 062 4 oz 062 4 oz 063 Ceelite (315 Crater) electric blanket control with neon	37 67 127 14 22 3	6ea 6ea 6ea 0 8 4	18 32 62	1ea 42 3ea 75 1lea 135 2ea 255 8 10 29 5 2 0 3 111 42 12 14 8	0 0 9 6 6 0 9 6		tablets	69 76 18 52 13 38 27 57 45 33 11	0 7ea 6ea 0ea 6 9 6 3 3 6	17 19 6 28 22 16 2	0 1½ea 9 0 1 3 10 7½	134 27 78 2 4 3 9 7 5	9 0 3 9 0 6 6 6 6 6 6 6 6 6 6 0 TS
Delete	1 oz 061 2 oz 062 4 oz 062 4 oz 063 Ceelite (315 Crater) electric blanket control with neon	37 67 127 14 22 3	6ea 6ea 6ea 0 8 4	18 32 62	1ea 42 3ea 75 1lea135 2ea255 8 10 29 5 2 0 3 111 42 12 12 10 54 8 6	0 0 9 6 6 0 9 6		tablets	69 76 18 52 13 38 27 57 45 33 11 10 40 243	0 7ea 6ea 0ea 6 9 6 3 3 6 6 6 0ea 4ea	17 19 6 28 22 16 2	0 1½ea 9 0 1 3 10 7½	27 78 2 4 3 9 7 5 1 1 60 365	9 0 3 9 0 6 6 6 6 6 6 0 TS 0 TS
Delete	1 oz 061 2 oz 062 4 oz 063 Ceclite (315 Crater) electric blanket control with neon Ceetherm (315 Crater) electric blanket control Check (665 JS) cream 271 spray	37 67 127 14 22 3	6ea 6ea 6ea 0 8 4	18 32 62	1ea 42 3ea 75 1lea 135 2ea 255 8 10 29 5 2 0 3 111 4 42 2 10 54 4 6 6 12 15	0 0 9 6 6 0 9 6 0 9 6		tablets	69 76 18 52 13 38 27 57 45 33 11 10 243 21 86	0 7ea 6ea 0ea 6 9 6 3 3 6 6 6 0ea 4ea 0ea 4ea	17 19 6 28 22 16 2	0 1½ea 9 0 1 3 10 7½	134 27 78 2 4 3 9 7 5 1 1 60 365 31 129	0 9 0 3 9 0 6 6 6 6 6 7 8 9 0 7 7 8 8 6 6 7 8 7 8 8 8 8 8 8 8 8 8 8 8
Delete	1 oz 061 2 oz 062 4 oz 062 4 oz 063 Ceelite (315 Crater) electric blanket control with neon Ceetherm (315 Crater) electric blanket control Check (665 JS) cream 271 spray 269 Chesties (1215 Teasdale) Chilton (257 Chilton) Acculux rechargeable torch illuminated magnifier angle holder Accundash equipment bag for photoflash thread counter screen plate throat spatula kit with stand dental kit with stand otoscope	37 67 127 14 222 3	6ea 6ea 6ea 0 8 4	18 32 62 3 11	1ea 42 3ea 75 1lea 135 2ea 255 2ea 255 2 3 11 1 3 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 3 1 1 3 1 1 3 1 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3	0 0 9 6 6 0 9 6 0 9 6		tablets	69 76 18 52 13 38 27 57 45 33 11 10 40 243 21 86 417	0 7ea 6ea 0ea 6 9 6 3 3 6 6 0ea 4ea 0ea 0ea 10ea 10ea 10ea 10ea 10ea 10ea	17 19 6 28 22 16 2	0 1½ea 9 0 1 3 10 7½	134 27 78 2 4 3 9 7 5 1 1 60 365 31 129 625	0 9 0 3 9 0 6 6 6 6 6 6 6 6 7 8 8 9 0 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
Delete	1 oz 061 2 oz 062 4 oz 063 Ceelite (315 Crater) electric blanket control with neon Ceetherm (315 Crater) electric blanket control Check (665 JS) cream . 271 Spray . 269 Chesties (1215 Teasdale) Chilton (257 Chilton) Acculux rechargeable torch illuminated magnifier angle holder Acculus rechargeable torch illuminated magnifier sorgen plate throat spatula kit with stand otoscope adaptor	37 67 127 14 222 3	6ea 6ea 6ea 0 8 4	18 32 62 3 11	1ea 42 3ea 75 1lea 135 2ea 255 8 10 29 5 2 2 0 3 111 113 12 12 12 12 12 12 12 13 13	0 0 9 6 6 0 9 6 0 4 0 9 3 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0		tablets	69 76 18 52 13 38 27 57 45 33 11 10 40 243 21 86 417 20 167	0 7ea 6ea 0ea 6 9 6 3 3 6 6 0ea 4ea 0ea 4ea 0ea 4ea 2ea	17 19 6 28 22 16 2 2	0 1½ea 9 0 1 3 10 7½ 	134 27 78 2 4 3 9 7 5 1 1 60 365 31 129 625 250	0 9 0 3 9 0 6 6 6 6 6 6 6 7 7 7 8 8 8 8 8 7 8 7 8 8 7 8 8 7 8 8 8 8 7 8 8 8 8 8 7 8
Delete	1 0 z 061 2 0z 062 4 0z 063 Ceclite (315 Crater) electric blanket control with neon Ceetherm (315 Crater) electric blanket control Spray 269 Chesties (1215 Teasdale) Chilton (257 Chilton) Acculux rechargeable torch illuminated magnifier angle holder Acculash equipment bag for photoflash thread counter screen plate throat spatula kit with stand dental kit with stand otoscope adaptor reading lens. circuit tester	37 67 127	6ea 6ea 6ea 0 8 4	18 32 62 3 11	1ea 42 3ea 75 1lea 135 2ea 255 8 10 29 5 2 0 11 1 42 12 10 54 6 12 13 13 13 13	0 9 6 6 9 6 0 9 6 0 9 6 0 9 6 0 6 0 6 0		tablets	69 76 18 52 13 38 27 57 45 33 11 10 243 21 86 417 20	0 7ea 6ea 0ea 6 9 6 3 3 6 6 6 0ea 4ea 0ea 4ea 0ea 4ea	17 19 6 28 22 16 2 2	0 1½ea 9 0 1 10 7½ 	134 27 78 2 4 3 9 7 5 1 1 60 365 31 129 625 250	0 9 0 3 9 0 6 6 6 6 6 6 6 6 7 7 8 8 8 8 7 8 7 8 8 7 8 7
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Delete	1 oz 061 2 oz 062 4 oz 062 4 oz 063 Ceelite (315 Crater) electric blanket control with neon Ceetherm (315 Crater) electric blanket control Spray 269 Chesties (1215 Teasdale) Chitton (257 Chilton) Acculux rechargeable torch illuminated magnifier angle holder Acculiash equipment bag for photoflash thread counter screen plate throat spatula kit with stand dental kit with stand otoscope adaptor circuit tester spy light spare bulb charging adaptor Chinchilla (Weil) (960 ADP) eau parfumee 20 z 080 4 oz 081	37 67 127	6ea	18 32 62 3 11	1ea 135 2ea 255 1lea 135 2ea 255 8 10 29 0 3 111 42 10 54 6 15 13 16 20 24 28 27 ?4ea 13	0 0 0 9 6 6 0 9 6 0 4 0 9 3 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0		tablets	69 76 18 52 21 33 38 27 57 45 33 311 10 40 243 21 167 812 7 12 24 42 29	0 7ea 6ea 0ea 6e 9 6 3 3 6 6 6 0ea 4ea 0ea 4ea 2ea 6ea 0 0	17 19 6 28 22 16 2 2 2	0 1½ea 9 0 1 3 10 7½	27 78 2 4 3 9 7 5 1 1 60 365 31 129 625 3250 2218 1 2 3 5	0 9 0 3 9 0 0 6 6 6 6 6 6 TS S S TS
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Delete	1 oz 061 2 oz 062 4 oz 062 4 oz 063 Ceelite (315 Crater) electric blanket control with neon Ceetherm (315 Crater) electric blanket control Check (665 JS) cream Spray 269 Chesties (1215 Teasdale) Chilton (257 Chilton) Acculux rechargeable torch illuminated magnifier angle holder Accufash equipment bag for photoflash thread counter screen plate throat spatula kit with stand dental kit with stand otoscope adaptor circuit tester spy light spare bulb charging adaptor charging adaptor Chinchilla (Weil) (960 ADP) eau parfumee 2 oz 080 4 oz 081 8 oz 082 16 oz 083 perfume handbag 017	377 677 677 677 677 677 677 677 677 677	6ea	18 32 62 3 11 4 8 12 22 3	1ea 42 28 28 28 29 28 28 28 28 28 28 28 28 28 28 28 28 28	0 0 0 9 6 6 0 9 6 0 4 0 9 3 3 0 6 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0		tablets	69 76 18 52 21 33 38 27 57 45 5 33 11 10 243 243 27 12 24 29 27 24	0 7ea 6ea 0ea 6ea 0ea 6e 9 6 3 3 6 6 6 0ea 4ea 0ea 4ea 0ea 4ea 0 0 0	17 19 6 28 22 16 2 2 2	0 1½ea 9 0 1 3 10 7½ 6 0	27 78 24 3 9 7 5 1 1 60 365 31 1 225 30 2218 1 2 3 3 6 3 6 3 1 3 1 3 1 2 3 3 3 3 3 3 3 3 3 3 3 3 3	0 9 0 3 9 0 6 6 6 6 6 6 7 TS SS TS TS TS TS TS TS TS TS TS TS TS
Delete	1 0 z 061 2 0z 062 4 0z 062 4 0z 063 Ceelite (315 Crater) electric blanket control with neon Ceetherm (315 Crater) electric blanket control Check (665 JS) cream 271 Spray 269 Chesties (1215 Teasdale) Chilton (257 Chilton) Acculux rechargeable torch illuminated magnifier angle holder Acculiash equipment bag for photoflash thread counter screen plate throat spatula kit with stand dental kit with stand otoscope adaptor circuit tester spy light spare bulb charging adaptor Chinchilla (Weil) (960 ADP) eau parfumee 2 0z 080 A 0z 082 B 0z 082 B 0z 082 B 0z 082 B 0z 083 perfume handbag 017 A 0z 016 A 0z 016 A 0z 016	37 67 67 67 67 67 67 67 67 67 67 67 67 67	6ea	18 32 62 3 11 4 8 12 22 3 7 7	1ea 135 2ea 255 1lea 135 2ea 255 8 10 29 5 2 3 111 42 12 12 14 15 13 16 20 24 28 2 7 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0 0 0 9 6 6 0 9 6 0 4 0 9 3 0 6 0 6 0 6 0 6 0 6 0 0 0 0 0 0 0 0 0		tablets	69 76 18 52 13 38 27 57 45 5 33 11 100 243 21 67 7 12 24 229 27 7	0 7ea 6ea 0ea 6e 9 6 3 3 6 6 6 0ea 4ea 0ea 4ea 0ea 4ea 0 0ea 4ea 0 0ea 4ea 4ea 4ea 4ea 6ea 6ea 6ea 6ea 6ea 6ea 6ea 6ea 6ea 6	17 19 6 28 22 16 2 2 2	0 1½ea 9 0 1 3 10 7½	27 78 24 3 9 7 5 1 1 60 365 31 1 225 30 2218 1 2 3 3 6 3 6 3 1 3 1 3 1 2 3 3 3 3 3 3 3 3 3 3 3 3 3	0 9 0 3 9 0 6 6 6 6 6 6 7 7 8 8 9 7 8 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 8 9
Delete	1 0z 061 2 0z 062 4 0z 063 Ceclite (315 Crater) electric blanket control with neon Ceetherm (315 Crater) electric blanket control Check (665 JS) cream 271 Spray 269 Chesties (1215 Teasdale) Chilton (257 Chilton) Acculux rechargeable torch illuminated magnifier angle holder Acculash equipment bag for photoflash thread counter screen plate throat spatula kit with stand dental kit with stand otoscope adaptor reading lens circuit tester spare bulb charging adaptor Chinchilla (Weil) (960 ADP) eau parfumee 2 0z 080 4 0z 081 8 0z 082 16 0z 083 perfume handbag 017 2 0z 016	377 127 14 222 3	6ea	18 32 62 3 11 4 8 12 22 23 7 7 12 20	1ea 42 28 28 3111	000096609960486006113666600000		tablets	69 76 18 52 13 38 27 57 45 5 33 11 10 243 21 86 40 7 12 22 22 24 29 26 4	0 7ea 6ea 0ea 6ea 0ea 6 9 6 3 3 6 6 6 0ea 4ea 0ea 4ea 0ea 4ea 0 0 0 4	17 19 6 28 22 16 2 2 2 1 6 6 73 6	0 1½ea 9 0 1 3 10 7½ 1 6 0 0	27 78 2 4 3 9 75 1 1 60 365 31 129 5250 218 1 2 3 5 10 366 42 9	0 9 0 3 9 0 6 6 6 6 6 6 6 6 7 TS 6 6 TS TS 7 TS 7 T
Delete	1 oz 061	37 67 67 67 67 67 67 67 67 67 67 67 67 67	6ea	18 32 62 3 11 4 8 12 22 3 7 7	1ea 135 2ea 255 1lea 135 2ea 255 8 10 29 5 2 3 111 42 12 12 14 15 13 16 20 24 28 2 7 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0 0 0 9 6 6 0 9 6 0 4 0 9 3 0 6 0 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6		tablets	69 76 18 52 13 38 27 57 45 5 40 243 111 100 243 21 167 812 244 29 27 24 29 26 4 7 10	0 7ea 6ea 0ea 6e 3 3 3 6 6 0ea 4ea 0ea 4ea 0ea 4ea 0ea 4ea 0ea 4ea 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	17 19 6 28 22 16 2 2 2 3 6 6 733 16	0 1½ea 9 0 1 3 10 7½ 6 0	27 78 2 4 3 9 7 5 1 1 600 365 3129 3 5 100 36 4 2 9 116	0 90 3 90 3 90 6 6 6 6 6 6 7 7 8 8 7 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9
Delete	1 0z 061 2 0z 062 4 0z 063 Ceelite (315 Crater) electric blanket control with neon Ceetherm (315 Crater) electric blanket control Check (665 JS) cream 271 Spray 269 Chesties (1215 Teasdale) Chilton (257 Chilton) Acculux rechargeable torch illuminated magnifier angle holder Acculash hotolash thread counter screen plate throat spatula kit with stand dental kit with stand otoscope adaptor reading lens circuit tester spy light spare bulb charging adaptor Chinchilla (Weil) (960 ADP) eau parfumee 2 0z 080 4 0z 081 8 0z 082 16 0z 083 perfume handbag 17 d 0z 016 18 0z 016 19 0z 015 10 z 016 10 z 014 2 0z 013 handbag coffret SE "Secret de Venus" bath oil	37 127	6ea	18 32 62 3 11 4 8 12 22 2 3 7 12 12 0 36 7	1ea 135 2ea 255 1lea 135 2ea 255 8 10 29 5 0 3 11 1 42 12 13 16 20 13 16 20 24 12 13 16 20 24 28 28 29 29 20 24 28 .	0 0 0 9 6 6 0 9 6 0 6 0 6 0 6 0 6 0 6 0		tablets	69 76 18 522 13 38 277 57 45 33 311 10 40 243 86 417 7 12 24 29 27 24 29 26 4 7 100 78 78	0 7ea 6ea 0ea 6ea 0ea 6e 9 6 3 3 6 6 6 0ea 4ea 0ea 4ea 2ea 6ea 0 0	17 19 6 28 22 16 2 2 2 3 6 6 73 16	0 1½ea 9 0 1 3 10 7½ 6 0	27 78 2 4 3 9 7 5 1 1 600 365 31 1 9 2 5 5 30 2 2 1 8 1 2 3 5 1 0 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0 9 0 3 3 9 0 0 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
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Oelete	1 0z 061 2 0z 062 4 0z 063 Ceclite (315 Crater) electric blanket control with neon Ceetherm (315 Crater) electric blanket control Check (665 JS) cream 271 Spray 269 Chesties (1215 Teasdale) Chilton (257 Chilton) Acculux rechargeable torch illuminated magnifier angle holder Accultash equipment bag for photoflash thread counter screen plate throat spatula kit with stand dental kit with stand otoscope adaptor circuit tester spy light spare bulb charging adaptor Chinchilla (Weil) (960 ADP) eau parfumee 2 0z 080 4 0z 081 8 0z 082 perfume handbag 16 0z 083 perfume handbag 17	37 127 14 222 33	6ea	18 32 62 3 11 4 8 12 22 3 7 12 0 36 6 7 2 2 4 10 10 11 10 10 10 10 10 10 10 10 10 10	1ea 12	00009660960048606113666600000060000000000000000000000		tablets	57 45 52 57 45 33 38 27 57 45 33 311 10 40 243 21 86 417 70 167 812 22 24 29 27 71 20 20 21 21 21 21 21 21 21 21 21 21	0 7ea 6ea 0ea 6ea 0ea 4ea 2ea 6ea 0ea 4ea 10ea 6ea 6ea 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	17 19 6 28 22 16 2 2 2 2 16 5 5 13 5 5 5 13 5 5	0 1½ea	27 78 2 4 4 3 9 7 5 1 1 60 3 65 1 129 5 250 218 1 2 3 5 1 3 6 4 2 9 1 1 167 1 1 3 7 3 1 1 167 1 3 7 3 1 1 167 1 1 3 7 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 9 0 3 9 0 6 6 6 6 6 6 6 6 6 7 7 8 7 8 9 7 8 9 9 9 9 9 9 9 9 9 9 9 9
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	1 oz 061	377 127	6ea	18 32 62 311 48 122 23 7 7 122 206 7 7 22 210 118 32 62 2	1ea 125 2ea 255 1lea 135 2ea 255 1lea 135 2ea 255 1lea 135 2ea 255 3 114 42 12 13 14 14 15 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	0000 9660996048606113666660000006000060000000000000000		tablets	69 76 18 52 27 27 45 57 10 40 243 21 21 24 29 27 4 29 264 10 78 10 20 52 23 38 8 13 22 23 88 22 27 7	0 7ea 6ea 0ea 6ea 0ea 6e 9 6 3 3 6 6 6 0ea 4ea 0ea 4ea 0ea 4ea 0ea 4ea 0ea 10ea 6e 0 0 0 4	17 19 6 28 22 16 22 2 2 3 6 6 5 5 13 5 9 9 6 11 19 6 6 11 11 11 1 1	0 1½ea	134 2782433 9 75110605 365 1195 2508 12 3 5 106 42 9 11 167 11 1 3 7 3 5 5 2 4 6 6 1 1 1 1 1 1 1 1 3 7 3 5 5 2 4 6 6 4 1 1	0 903390 6 6 6 6 6 6 6 6 6 TS SSSSSSSSSSSSSSSSS

	hair lacquer spray bottle						Tycoon (705 Kirby)
	2½ oz	11	0	5	6	2 0	after shave lotion 32 0 16 0 6 0
	Maws (810 Maw) baby pants nylon, lace covered, "Sunday"	44	0			5 6	deodorant 32 0 16 0 6 0 hair dressing 32 0 16 0 6 0
	Metercal (826 MJ)	71	ŏ			8 6	medicated shampoo 32 0 16 0 6 0
	Miners (876 MP) hair lacquer	13	6	6	9	2 3	pre-electric shave lotion 32 0 16 0 6 0
	refill	7	6	3	9	1 3	presentation packs of
	lipstick	$\frac{9}{18}$	0	9	$\frac{6}{0}$	1 6	
	mascara autobrush	21	0	10	6-	3 6	tables 0.5 gm 100 26 0eg 6 8eg 45 6
	block nail lacquer	9	0	4	$\frac{6}{6}$	1 6	500 116 800 90 900 704 0
	frosted	15	0	7	6	2 6	Uvistat (1305 WB)
	remover shadow combo	7	6	3	9	1 3	
	stick make-up	9	0	4	6	1 6	medicated shampoo 28 10 7 24 3 11
	super liner talcum	9 15	0	4 7	$\frac{6}{6}$	1 6	Viacutaii (1505 W.B) tune 10 42 0 10 6 6 14
	Mos-tox (814 M&B) size 1	40	0			4 0	
	size 2 My Tan (467 Fleet)	52	0		• •	6 6	(1000 112)
	(distributors 128 Biometica)						sodium tablets 20 mgm 50 360 0 45 0 Wet and Set (220 CALG)
	after shave lotion	90	0	45	0	15 0	hair curling tissues 17 6 8 9 2 11
	Noir (Weil) (960 ADP) eau parfumee 2 oz 080	9	6ea	4	7½ea	19 6	Yaxa (261 Christy) perfumed deodorant stick 19 6 9 9 3 3
	4 oz 081	16	6ea	8	0½ea	33 6	perfumed roll-on 27 0 13 6 4 6
	8 oz 082 16 oz 083	26 46	3ea 3ea	$\frac{12}{22}$	9½ea 6ea		10m1 21 0 10 0 3 0
	perfume handbag 017	7	9ea	3	9ea	16 0	2ap (1070 Windsor)
	½ oz 016 ½ oz 015	$\frac{14}{26}$	9ea 3ea	$\frac{7}{12}$	2ea 9}ea		gross
	1 oz 014	42	0ea	20	6ea	85 0	
	handbag coffret SE	75 15	0ea 9ea	36 7	6ea 1 8ea		4 oz 081 16 6ea 8 0\frac{1}{2}ea33 6
	"Secret de Venus" bath oil bobines 12 060	50	0ea	24	41 1		8 oz 082 26 3ea 12 9½ea 52 6 16 oz 083 46 3ea 22 6ea 92 6
	bobine 1 060	4	3ea	2	0½ea	8 6	perfume handbag 017 7 9ea 3 9ea 16 0
	$\frac{1}{2}$ oz 060B 1 oz 061	$\frac{20}{37}$	9ea 6ea	10 18	1ea 3ea		
	2 oz 062	67	6ea	32	11ea 1	35 0	1 oz 014 42 0ea 20 6ea 85 0
	4 oz 063 Padisha (Weil) (960 ADP)	127	6ea	62	2ea2	55 0	handbag coffret SE 15 9ea 7 8ea 32 0
	eau parfumee 2 oz 080	9	6ea	4	7 1 ea	19 6	diffusette ½ oz 016D 17 6ea 8 6ea 35 0
	4 oz 081 8 oz 082	$\frac{16}{26}$	6ea 3ea	$\frac{8}{12}$	0½ea 9½ea		refill $\frac{1}{2}$ oz 015R 26 0ea 12 8ea 52 6
	16 oz 083	46	3ea	22	6ea	92 6	de luve bottle in offret 1 oz 00 0ea 65 10ea 270 0
	perfume handbag 017	$\frac{7}{14}$	9ea 9ea	3 7	9ea 2ea		"Secret de Venus" bath oil
	½ oz 015	26	3ea	12	9}ea	53 0	boblines 12 - 060 - 50 0ea 24 4 gea 102 0
	1 oz 014 2 oz 013	$\frac{42}{75}$	0ea 0ea	20 36	6ea 6ea 1		½ oz 060B 20 9ea 10 1ea 42 0
	handbag'coffret . SE "Secret de Venus" bath oil	15	9ea	7	8ea		1 oz 061 37 6ea 18 3ea 75 0 2 oz 062 67 6ea 32 11ea 135 0
	h-hl 10 000	50	0ea	24	4100	100 0	4 oz 063 197 6on 69 9on 055 0
	DODINES 12 060	00	oca	24		102 0	
	bobine 1 060	4	3ea	2	0½ea	8 6	
	bobine $1 060$ $\frac{1}{2}$ oz 060 B 1 oz 061	$\frac{4}{20}$	3ea 9ea 6ea	10 18	0½ea 1ea 3ea	8 6 42 0 75 0	AMENDMENTS TO KEY TO SUPPLIERS:
	bobine 1 060 ½ oz 060B 1 oz 061 2 oz 062	4 20 37 67	3ea 9ea 6ea 6ea	$\begin{array}{c} 2 \\ 10 \\ 18 \\ 32 \end{array}$	0½ea 1ea 3ea 11ea 1	8 6 42 0 75 0 35 0	AMENDMENTS TO KEY TO SUPPLIERS: (220 CALG) = C.A.L.G. ENTERPRISES, LTD., 34 Upper Brook Street, London, W.1. Hyde Park 0148.
	bobine . 1 060 ½ 0z 060B 1 0z 061 2 0z 062 4 0z 063 Parabal (1320 WP)	20 37 67 127	3ea 9ea 6ea 6ea	$\begin{array}{c} 2 \\ 10 \\ 18 \\ 32 \\ 62 \end{array}$	0½ea 1ea 3ea 11ea 1 2ea 2	8 6 42 0 75 0 35 0 55 0	AMENDMENTS TO KEY TO SUPPLIERS: (220 CALG) = C.A.L.G. ENTERPRISES, LTD., 34 Upper Brook Street, London, W.1. Hyde Park 0148. (257 Chilton) = CHILTON ELECTRIC PRODUCTS, LTD., Hungerford,
	bobine 1 060 ½ 0z 060B 1 0z 061 2 0z 062 4 0z 063	4 20 37 67	3ea 9ea 6ea 6ea	$\begin{array}{c} 2 \\ 10 \\ 18 \\ 32 \\ 62 \end{array}$	0½ea 1ea 3ea 11ea 1	8 6 42 0 75 0 35 0	AMENDMENTS TO KEY TO SUPPLIERS: (220 CALG) = C.A.L.G. ENTERPRISES, LTD., 34 Upper Brook Street, London, W.1. Hyde Park 0148. (257 Chilton) = CHILTON ELECTRIC PRODUCTS, LTD., Hungerford, Berks. Hungerford 237. (315 Crater) = CRATER PRODUCTS, LTD., Lower Guildford Road,
	bobine . 1 060 ½ 0z 060B ½ 0z 061 2 0z 062 4 0z 063 Parabai (1320 WP) tablets 100 500	4 20 37 67 127 90 330	3ea 9ea 6ea 6ea 6ea	$\begin{array}{c} 2 \\ 10 \\ 18 \\ 32 \end{array}$	0½ea 1ea 3ea 11ea 2ea 2	8 6 42 0 75 0 35 0 255 0	AMENDMENTS TO KEY TO SUPPLIERS: (220 CALG) = C.A.L.G. ENTERPRISES, LTD., 34 Upper Brook Street, London, W.1. Hyde Park 0148. (257 Chilton) = CHILTON ELECTRIC PRODUCTS, LTD., Hungerford, Berks. Hungerford 237. (315 Crater) = CRATER PRODUCTS, LTD., Lower Guildford Road, Knaphill, Woking, Surrey. Brookwood 2571.
	bobine . 1 060	20 37 67 127 90 330	3ea 9ea 6ea 6ea 6ea	2 10 18 32 62 22 82	0½ea 1ea 3ea 11ea 1 2ea 2	8 6 42 0 75 0 135 0 155 0 13 2 48 2 2 6	### AMENDMENTS TO KEY TO SUPPLIERS: (220 CALG) = C.A.L.G. ENTERPRISES, LTD., 34 Upper Brook Street, London, W.1. Hyde Park 0148. (257 Chilton) = CHILTON ELECTRIC PRODUCTS, LTD., Hungerford, Berks. Hungerford 237. (315 Crater) = CRATER PRODUCTS, LTD., Lower Guildford Road, Knaphill, Woking, Surrey. Brookwood 2571. (461 FL) = FIBRENYL, LTD., 157 Dukes Road, London, W.3. Acorn 5073.
Delete	bobine . 1 060	4 20 37 67 127 90 330 50	3ea 9ea 6ea 6ea 6ea	2 10 18 32 62 22 82	0½ea 1ea 3ea 11ea 1 2ea 2	8 6 42 0 75 0 35 0 255 0 13 2 48 2 2 6 2 0	AMENDMENTS TO KEY TO SUPPLIERS: (220 CALG) = C.A.L.G. ENTERPRISES, LTD., 34 Upper Brook Street, London, W.1. Hyde Park 0148. (257 Chilton) = CHILTON ELECTRIC PRODUCTS, LTD., Hungerford, Berks. Hungerford 237. (315 Crater) = CRATER PRODUCTS, LTD., Lower Guildford Road, Knaphill, Woking, Surrey. Brookwood 2571. (461 FL) = FIBRENYL, LTD., 157 Dukes Road, London, W.3. Acorn 5073. (467 Fleet) = FLEET LABORATORIES, LTD., 675 Mount Pleasant Road, Toronto 7, Ontario, Canada.
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A	Energen (421 Energen)							A Infurno (232 Carter)	***					
	low sugar jams						_	massage cream 1½ oz	18	0	4	6	3	0
	strawberry ½ lb	15	0.			- 1	8	A Lion (205 Burgess)						
	1 lb	24	9.			2	9	ointment 1½ oz	15	0	3	9	2	0
	vic plum ½ lb	13	6.			1	6	3 oz	33	0	8	3	4	3
	1 lb	22	6.			2	6	■ Maw's (810 Maw)						
	orange marmalade } lb	13	6 .			1	6	polythene feeder 4 oz 303.13	37	8			2	6
	1 lb	20	3 .			2	3	● Nivea (1155 S&N)	٠.				_	•
			٠.	•		_	•	Sunea sun filter creme 344	10	6	5	3	1	9
	Fashion Style (631 Hudnut)					_	_	346	16		8	3	2	ŏ
	soft casual 202	33	6	16	9	5	6	sun tan oil 343	70		35	ő	11	5
	200	53	6	26	9	8	9		10	U	33	U		3
	very curly 203	33	6	16	9	5	6	PAS (572 HC) sodium tablets	1.4	10			40	•
	201	53	6	26	9	8	9	enteric coating 0.5 gm 500		10ea		• •	19	9
	for children	29	6	14	9	4	9	1000	27	9ea			37	0
	Fernings (1100 TS)							sugar/enteric coating 0.5 gm						
	Fennings (1100 JS)	14	6		P7 1		44	500	15				20	0
	baby dusting powder	14	0	3	$7\frac{1}{2}$	1	11	1000	28	0ea			37	4
	cooling powders children's				_		_	enteric coating 0.75 gm 500	19	9ea			26	4
	12×5	45	0	11	3		6	1000	37	6ea			50	0
	20	14	6	$\frac{3}{17}$	71 42 12	- 1	11	Pin Quick (631 Hudnut)	28	2	14	1	4	7
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	little healers 36	12	6	3	11	- 1	8	- 3-34	20	0			2	6
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	12×12	60	0	15	Ō		8					• •		
_		30		-0			·	R Tace (838 MN) tablets 30	164			• •	20	6 †s4B
•	Immac (655 ICC)					_		100	504			• •	63	0 †s4B
	hair removing cream	44	2	22	1	7	0	A Tress (525 Golden)	10	0	5	0	1	8

TRADE MARKS

APPLICATIONS ADVERTISED BEFORE REGISTRATION

From the "Trade Marks Journal," August 24 For cosmetics, soaps, perfumes, toilet preparations (not medicated), hair lotion, hair shampoos, dentifrices, and essential oils (3)

HER EXCELLENCY, 803,592,by Rimmel, Ltd., London, W.1.

For perfumes, toilet preparations (not medicated), cosmetic preparations, dentifrices, depilatory preparations, toilet articles (not included in other classes), sachets for use in waving the hair, soaps and essential oils (3)

AMISE, 805,248, by D. R. Collins, Ltd., London, W.1,

For infants' foods and pharmaceutical, veterinary and sanitary substances, none containing malt; medical and surgical plasters, materials prepared for bandaging, gauze for dressings and adhesive tape for surgical purposes (5)

Device with word DUMEX, 799,665, by A/S Dumex (Dumex, Ltd.), Copenhagen, Denmark.
For pharmaceutical preparations and substances for human and veterinary use, all being for sale in the United Kingdom (5)

WINACOL, 802,941, by Bayer Products, Ltd., Kingston-upon-Thames, Surrey.

For pharmaceutical preparations for the treatment

of coughs (5)

BRONTUSSIN, 803,354, by Sandersons (Chemists), Ltd., Manchester, 1, Lancs.

For antibiotics and antibiotic preparations (5)
PARGOMYCIN, 803,634, by Les Laboratoires
Français de Chimotherapie, S.A., Paris 7e,

For drugs for pharmaceutical purposes (5) ORAPEN-V, ORAPEN-K, 795,433-34, by Inde-

pendent Research Laboratories, London, W.C.2. For pharmaceutical preparations (5)

TECAL-DRINE, 795,771, by Abbott Laboratories, North Chicago, Illinois, U.S.A.

For pharmaceutical and veterinary products and

preparations (5)

NOBEPSOR, NOBETEER, 803,712-13, by A.B. Bofors, Bofors, Sweden.

For pharmaceutical and veterinary products and preparations, and materials prepared for bandag-

NOBETEX, 803,714, by A.B. Bofors, Bofors,

Sweden.

For photographic and cinematographic instruments, apparatus and utensils, and parts and fittings (9)

ZORKI, 803,326, by Photopia, Ltd., Newcastle, Staffs.

For hypodermic syringes and needles (10)

Devices with wording HYPOSTERILE, HYPO-LANCE, 802,189-90, by Hypo Surgical Supply Corporation, New York, 13, U.S.A.

The following marks have been assigned without goodwill of the business in which they were then in use:-

FLORET, 741,763, 760,922, FLORETHAZE, 768,013, by Reckitt & Sons, Ltd., Hull, Yorks, to Reckitt, Colman, Chiswick (Overseas), Ltd., Hull, Yorks.

From the "Trade Marks Journal," August 31 For all goods (5)

YORDAC, 797,210, by Dales Pharmaœuticals,

Ltd., Steeton, nr. Keighley, Yorks, SAL-VARAL, 798,112, by Roche Products, Ltd., Welwyn Garden City, Herts, HUCYN, 804,878, by Parke, Davis & Co., Detroit, 32, Michigan, U.S.A., and Hounslow, Middlesex, FAYDO, 805,407, by Larsons Produkte, A.G., Glerus, Switzerland. Glarus, Switzerland,

For all goods (3)

GYGLAS, 794,537, by J. R. Geigy, S.A. (J. R. Geigy, A.G.), Basle, Switzerland. For hair lotion (3)

TALONAL, 797,485, by Talanol, Ltd., London, S.W.10.

For shampoos for the hair and scalp (3) SPAN, 797,681, by County Laboratories, Ltd., Stanmore, Middlesex.

For detergents (not for use in industrial or manufacturing processes) (3)
DEOKLEEN, 799,537, by Deosan, Ltd., Lon-

don, W.1.

For detergents (not for industrial or manufacturing use) and preparations for laundry purposes

FEX, 800,145, by Lever Brothers, Port Sunlight, Ltd., Port Sunlight, Ches.

For cosmetics and non-medicated toilet prepara-

tions for men (3)
TYCOON, 805,251, by H. & T. Kirby & Co., Ltd., London, N.W.2.

For cleaning preparations for lavatories (3) BUZZO, 804,342, by Borite, Ltd., Westerham,

Kent.

For pharmaceutical preparations and substances (5) STREPTAIRE, 805,528, by Boots Pure Drug Co., Ltd., Nottingham.

For veterinary preparations for pigs (5) PIGDEX, 792,760, by American Cyanamid Co., New York, U.S.A.

For all goods, but not including corn silk or any goods of the same description (5)

DRAGANON, 798,098, by Roche Products, Ltd., Welwyn Garden City, Herts.

For pharmaceutical preparations for use in the treatment of obesity (5)

M1ROLAN, 798,107, by Roche Products, Ltd., Welwyn Garden City, Herts.

For antiseptics, germicides, and fungicides, for industrial, sanitary, and veterinary use (5) THOROCHEM, 799,148, by Herbert Henry Brookes, Smallfield, Horley, Surrey.

For pharmaceutical preparations in tablet form

for use in the treatment of asthma (5) AERIS, 799,361, by Silten, Ltd., Hatfield, Herts.

For antibiotic preparations (5)

BATRAMYCIN, 800,106, by Ed. Geistlich
Söhne, A.G., für Chemische Industrie, Wolhusen, Switzerland.

For pharmaceutical preparations and substances, all containing amides (5)

FURAM1DE, 800,923, by Boots Pure Drug Co., Ltd., Nottingham. For anæsthetics (5)

EDALCAIN, 803,706, by A. B. Bofors, Bofors, For pharmaceutical and veterinary products and preparations (5)

EDALCAL, 803,707, by A. B. Bofors, Bofors,

For photographic printing and developing apparatus and parts (9)

DIRECTOR, 802,541, by American Photocopy Equipment Co., Evanston, Illinois, U.S.A. For cinematographic cameras (9)

SCOPESIGHT, B796,982, by Kodak, Ltd., London, W.C.2. For small domestic utensils and containers (not

of precious metal or coated therewith), combs.

sponges, etc. (21)
MARWIN, B801,343, by Marshall Ward, Ltd., Ardwick, Manchester,

PATENTS COMPLETE SPECIFICATIONS ACCEPTED

From the "Official Journal (Patents)," August 24 Indole derivatives. Soc. des Usines Chimiques Rhone-Poulenc. 851,780.

Cyclohexylamine compounds and methods for producing same. Parke, Davis & Co. 851,989.

Preparation of 6-methyl steroid comp.
The British Drug Houses, Ltd. 851,741. compounds.

Preparation of 9-halo-11-hydroxyl-1, 4-pregnadi-ennes. American Cyanamid Co. 851,501. Production of steroids. Gyogyszeripari Kutato

Intezet, 851,563.

Steroids and the manufacture thereof, Upjohn Co. 851,988.

6-methyl steroid compounds and the preparation thereof. The British Drug Houses, Ltd. 851,742. Substituted dinitrophenyl pentenoates, Rohm & Haas Co. 851,907.

Fungicidal compositions and compounds for use therein, Shell Research, Ltd. 851,795.
Insect control compositions. L. Ratner. 851,579.

Surgical material. Ethicon, Inc. 851,720.

Utilisation of molasses spent wash, J. A. Benckiser, G.m.b.H., Chemische Fabrik, 851,601.

UNITED STATES MARKET REPORT

New York, September 6: Higher were Magnesium chloride at \$3 per 100 lb., up 25 cents, and Potassium Bromide at 49 cents a lb., up $1\frac{1}{2}$ cents. PHENYLEPHRINE, which had appeared unsettled for some time, was finally reduced by \$15 to a new rate of \$145 per kilo. NICOTINAMIDE and NICOTINIC ACID continued in a highly competitive position, some fresh lots of both items arriving from Italy. Chilean Iodine remained 15 cents a lb. below the recently advanced price for domestic crude. Brazilian MENTHOL advanced 25 cents to \$8.50 per lb. Wild CHERRY BARK was higher, the thin green now being 26 cents a lb. and the thin natural 25 cents, each up five cents. East Indian SANDALWOOD OIL rose to \$22.50 a lb., up \$1.50, and Ceylon Citronella edged up five cents to \$1.05.

CONTEMPORARY **THEMES**

Subjects of contributions in current medical and technical periodicals.

DETECTION OF PREDIABETES by glucose-tolerance test sensitised by prednisolone, Lancet, August

LIVER DISEASE, Med. Press, August 24.

FEEDING the baby-breast or bottle, Med. Press, August 24.

EPILEPSY, Some interesting experiences in the treatment of patients suffering from, Med. Press, August 24.

UNITED STATES. The physician and the pharmaceutical industry in the. Proc. roy. Soc. Med., August.

NEUROLOGICAL INVESTIGATION in Britain from 1800 to the founding of the National Hospital, Proc. roy. Soc. Med., August.

DNA and biological research, Proc. roy, Soc. Med., August.

ORAL HYPOGLYCEMIC agents in the treatment of diabetes mellitus, Proc. roy. Soc. Med., August. A NEW synthetic penicillin, Brit. med. J., September 3.

TREATMENT of acute poisoning, Brit, med, J., September 3. CHLOROPHYLL extraction method,

IMPROVEO Science, August 5.

Effect of reservine on release of noradrenaline from transmitter granules in adrenergic nerves, Science, August 5.

WILLS

Mr. S. H. T. Ellis, M.P.S., 13 Poole Close, Hereford, left £5,139 (£4,655 net).

MR. J. E. EMMOTT, M.P.S., 1 Eastbourne

Avenue, Shirley, Southampton, Hants, left £1,258

(£1,205 net).

MR. A. S. GALLOWAY, M.P.S., 41 Beechfield Avenue, Blackpool, Lancs, left £79,362 (£79,219

MR. J. A. Hainstock, M.P.S., 5a South Street, Farnham, Surrey, left £3,971 (£3,142 net).
MR. J. R. Hayes, M.P.S., Fordham House,

Castle Rising Road, South Wotton, King's Lynn,

Norfolk, left £20,032 (£19,553 net). Mr. C. HEMINGWAY, M.P.S., 62 Combe Park, Bath, Somerset, left £3,406 (£3,206 net).

MR. W. A. Hudson, M.P.S., Bro Dawel, Llithfaen, North Wales, left £3,664 (£3,625 net).

Mr. H. Keast, M.P.S., 182 Coronation Road, Southville, Bristol, left £1,789 (£1,495 net). MR, J. H. LEWIS, M.P.S., 34 Tavistock Road,

Plymouth, left £13,339 (£11,198 net). MR. C. MACKAY, M.P.S., 5 Norton Grove, Morecambe and Heysham, Lancs, left £24,943

(£24,781 net). Mr. M. McCoubrey, M.P.S.N.I., 154 Cavehill

Road, Belfast, left personal estate in England and estate in Northern Ireland valued at £18,540. MR. E. MOUNTFORD, M.P.S., "Hedges," Guildford Road, East Horsley, Surrey, left £4,697 (£3,412 net).

Mr. J. M. Powell, M.P.S., 59 St. Butts, Reading, left £4,089 (£1,939 net). 59 St. Mary's

MR. A. P. RIDLEY, M.P.S., 47 Princes Street,

Ipswich, Suffolk (a director of Grimwade, Ridley & Co. (Ipswich), Ltd.), left £32,475 (£32,406 net).

Mrs. O. M. Sharpe, M.P.S., 22 Owls Road, Bournemouth, Hants, left £5,302 (£5,231 net).

PRINT AND PUBLICITY

PUBLICATIONS

Periodicals

CHILEAN IODINE EDUCATIONAL BUREAU, Chile House, Ropemaker Street, London, E.C.2: Current Iodine Literature, Vol. 7, No. 9, 1960. Pp. 18.

HENRY WIGGIN & Co., LTD., Wiggin Street, Birmingham, 16: Wiggin Nickel Alloys, No. 57,



TUMBLE DISPLAY: A new tumble basket of one-piece construction made by Fords of Bristol, Ltd., 7 Clyde Road, Bristol, 6. The display piece is available from representatives of Miles Laboratories, Ltd., makers of Alka-Seltzer.

PRESS ADVERTISING

COUNTY LABORATORIES, LTD., Beecham House, Great West Road, Brentford, Middlesex: Macleans tooth-paste. In The Times, Daily Express, Daily Mirror, Sunday Pictorial. September and October.

Dixor, Ltd., St. Leonard's Works, Mortlake, London, S.W.14; Velouty powder cream, In She, Feminine Five, Honey, Date, Every-woman, Modern Woman, Silver Star. During September, October and November.

ENERGEN FOODS Co., LTD., Energen Works, Pound Lane, London, N.W.10; Energen rolls. In Sunday newspapers and Radio Times. From mid-September.

EVER-READY RAZOR PRODUCTS, LTD., 26 Bedford Row, London, W.C.1: Pal Injecto-matic shaver. Christmas campaign, November 19 to December 21. In Daily Express, Daily Mirror, Daily Sketch, Daily Herald, News Chronicle, Reveille, Weekend, Titbits, Woman, Woman's Own, Woman's Mirror.



DISPLAYS AND OUTER: Wire and metal display stand sent with order for seventy-two Desogen lozenges. Pack for twenty-four shown closed and open for display. Manufacturers: Geigy Pharmaceutical Co., Ltd., Wythenshawe, Manchester, 23.

D. & W. Gibbs, Ltd., Hesketh House, Portman Square, London, W.1: Sunsilk tonic shampoo. In Daily Mirror, Daily Express, Woman and Woman's Own.

GOLDEN, LTD., 7 Grosvenor Street, London, W.1: Color-Glo sherry shades. From September 14 in Woman, Date, Honey, Woma Woman's Realm, Woman's Mirror. Woman's Own,

JANE SEYMOUR, LTD., 162 New Bond Street, London, W.1: Corvette preparations. In Daily Mirror, Daily Express and Woman.

LAUGHTON & SONS, LTD., Warstock Road, Bir-mingham, 14: Stratton compacts, Christmas campaign, In Sunday Pictorial, Sunday Express, Sunday Times, Sunday Dispatch, Vogue, She, Vanity Fair, Everywoman, Woman and Beauty, Modern Woman.

RONSON PRODUCTS, 1.TD., Leatherhead, Surrey: Ronson C.F.L. shaver. Christmas campaign, October 2 to December 18. In *The News of* the World, Empire News, The People, Sunday Express, Sunday Pictorial, and Reader's Digest (December).

COMMERCIAL TELEVISION

Figures in the columns represent number of appearances of the product during the week.

North Scotland Wales September 18-24 Alka-Seltzer Anadin André Philippe men's range Askir .. 3 - 1 - 3 - - -Aspro Beecham's pills powders 4 4 -- 4 4 4 -Christy's lanoline 1 1 1 1 ---face pack Coliclean spot remover Cooper's aerosols . . 2 2 2 3 2 2 2 4 1 Cuticura .. Delsey Euthymol tooth-1 1 2 1 1 1 1 1 paste Evan Williams 3 3 - 3 3 3 - cream shampoo ... Farley's rusks .. 1 1 1 — 2 — 3 3 3 3 4 -Germolene ... Johnson's baby suds 2 2 3 2 2 2 2 2 2 — Lanospray Loxene medicated shampoo .. Maclean's tooth-paste 2 3 3 3 3 Max Factor creme 3 3 3 2 2 2 2 2 2 Phosferine Phyllosan ... Radox Rimmel Rinstead pastilles . . 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 Sebbix shampoo . . - 2 2 2 2 2 2 1 3 1 Spontex car sponges 2 - - - - 1 - - -Tru-Gel 5 1 1 - 1 3 3 - 2 Winspray products . - 3 - - 1 - -

COMING EVENTS

Items for inclusion under this heading should be sent in time to reach the Editor not later than first post on Wednesday of the week of insertion.

Tuesday, September 13
LIVERPOOL BRANCH, GUILD OF PUBLIC PHARMACISTS, Walton Hospital, at 6.30 p.m. Film show by Cunard Steam-Ship Co., Ltd.

Wednesday, September 14

MANCHESTER PHARMACEUTICAL GOLFING SOCIETY, Denton golf club. Captain's prize competition.

Thursday, September 15

LONDON CHEMISTS' GOLFING SOCIETY, Northwood golf club. Fixture.

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HIGH-PROTEIN CEREAL

ROBINSON'S High-Protein Cereal

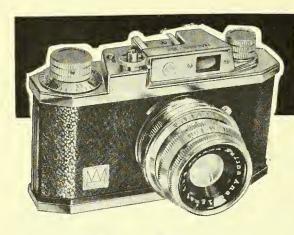
KEEN, ROBINSON & CO. Branch of J. & J. Colman Ltd. Carrow Works, Norwich Here is a picture no mother will pass by. And, with it, a story every mother will read.

The story of a great advance in baby foods—of Robinson's new High Protein Cereal, blended to give every baby from the age of 5 months the protein-rich diet doctors and nurses now advise for body-building and resistance to infection. High-Protein Cereal combines protein from eggs, milk and cheese with that from three cereals to make a balanced protein food.

This is the story being told in compelling advertisements. See them in specially selected women's magazines and in the *Daily Mirror*.

Let every mother see High Protein Cereal on your counter, too. High Protein Cereal will bring a lot of new customers your way.

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TO
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This striking display stand in white plastic is freely available, and the Reckitt & Sons representative will be glad to supply you.

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Specialty packs by WIKINSON & SIMPSON

"GALEN HOUSE" LOW FRIAR STREET. NEWCASTLE ON TYNE. Telephone: 29541 (7 lines)

"HAPPY FEET" Foot Powder Retail 1/11

"PHŒNIX" Hair Lacquer — for the smarter set! Retail 2/9 Triple Refill Pack 3/4

"CASTLE" WYNESS in four flavours—Ginger, Green Ginger, Black Currant, Raspberry Retail 1/3

Large Stocks of Proprietary Articles, Surgical Dressings, Sundries, Ethicals and Packed Goods

* We specialise in 'Own Name' packs at economic terms

Manufacturers of Galenicals, Tablets etc. Natural Health Salt. "Castle" Wyness, Drug and Spice Millers.

OUR DELIVERY SERVICE COVERS A WIDE AREA.

Eagerly accepted ... highly effective



Cherry-flavoured, non-astringent

SYTRON

liquid oral-iron therapy

Normally children rebel strongly against staking liquid iron preparations. But SYTRON* is different. A pleasant cherry-flavoured elixir, it has little or no astringent taste and proves completely acceptable to the most fastidious child.

Sytron does not stain teeth and, in its recommended dosage, seldom causes any intestinal irritation.

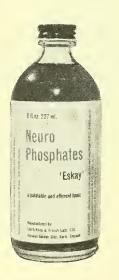
PARKE-DAVIS

SYTRON contains in 8 ml. (2 teaspoonfuls) sodium ironedetate equivalent to 55 mg. of iron, and is available in bottles of 4, 16 and 80 fl. ozs.



Benzedrex Inhaler

gives effective and prolonged relief of nasal congestion. In the handiest form for pocket or handbag, it can be used inconspicuously under all conditions and contains no messy fluids.



Neuro Phosphates,

a classic among tonics, is widely prescribed—and taken—with confidence. This appetite restoring tonic is as pleasant to take as an aperitif.



Smith Kline & French Laboratories Ltd

Welwyn Garden City, Herts

'Benzedrex' and 'Neuro Phosphates' are trade marks

BXN:TA30

FIRST EVER TONIC SHAMPOO

Sunsilk TONIC shampoo Sunsilk Sunsilk TONIC shampoo shampoo

hit the headlines on Sept. 8th, backedby a four-pronged advertising campaign

Full details inside

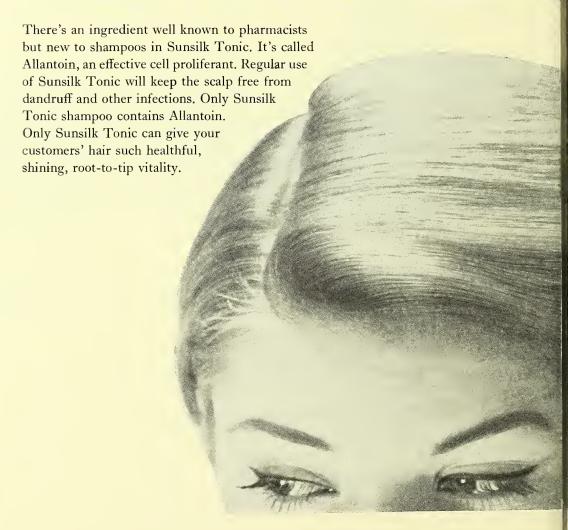
TV, NEWSPAPER, MAGAZINE, DISPLAY and the inside story of SUNSILK TONIC's wonderful ALLANTOIN

GST12480/1A

Sunsilk TONIC creates a new market!

Once your customers had only two types of shampoo to choose from — cosmetic and medicated. Now Sunsilk Tonic enters the field, creating a new market for you with the first shampoo specifically designed to give both health *and* beauty to hair. Sunsilk Tonic shampoo will give you the best of both markets!

The secret of Sunsilk TONIC and 'root-to-tip vitali



WE LAUNCHED SUNSILK TONIC ON SEPTEMBER 8th

with this dynamic four-point campaign

L-STATIONS TV 10 million homes. at after night, month after month, 45- and 15- and spots tell viewers vividly, dramatically—ussively!—about Sunsilk Tonic.

RESS 10½ million readers. Big advertisements he story of Sunsilk Tonic in the two biggest daily ers, 'Daily Mirror' and 'Daily Express'.

MAGAZINES 10 million readers. Whole page ads for Sunsilk Tonic will catch the attention of women all over the country—in the leading women's magazines 'Woman' and 'Woman's Own'.

DISPLAY Get your full share of the profits from the newest Gibbs product—use the new displays to link your shop with this tremendous campaign.



BEATSON DISPENSING



ANOTHER BEATSON SERVICE!

To ensure maximum protection against dirt and dust, all bottles from our dispensing range are packed in the Beatson Sealed Carton to maintain them in "production clean" condition until use.

"The Sign of a



Good Bottle"

Be sure to specify BEATSON

BEATSON, CLARK & CO., LTD.

GLASS BOTTLE MANUFACTURERS

ROTHERHAM

Established 1751

YORKSHIRE

»INGELHEIM« CHEMICALS

CAFFEINE AND THEOPHYLLINE

Caffeine Salts • Theophylline-Derivotives
Theophylline-Ethylenediamine

ALKALOIDS

Arecoline • Atropine • Emetine • Eserine

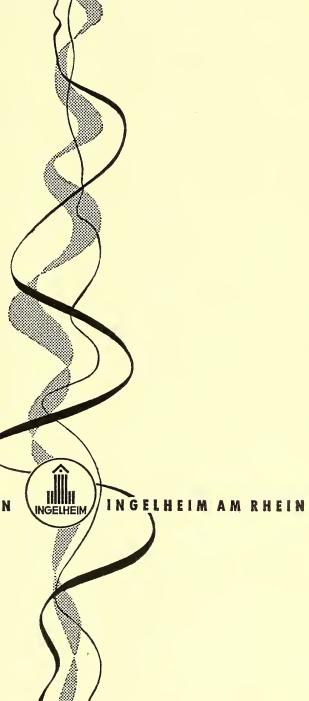
Homotropine • Hyoscyomine • Lobeline • Pilocarpine

Rescinnomine • Reserpine • Scopolamine • Yohimbine

PHARMACEUTICAL CHEMICALS

Adrenoline · Cholesterol · Cholic Acids · Cinchophen
Neocinchophen

C. H. BOEHRINGER SOHN



News from Beechar

REVISED RETAIL PRICES EFFECTIVE FROM 5th SEPTEMBER 1960

	Consun	ner Price
	Old	New
Beecham's Powders & Tablets	1/9½d.	1/11d.
Beecham's Powders & Tablets	3/11d .	4/-d.
Beecham's Powders (60's)	2 for 5½d.	3d. ea.
Phensic	1/9½d.	1/11d.
Phensic	3/11d .	4/-d.
Cephos Powders & Tablets	1/9d .	1/11d .
Cephos Powders & Tablets	3/11d.	4/-d.
Cephos Powders (60's)	2 for 5½d.	3d. ea.
Cephos Powders (120's)	2 for 5½d.	3d. ea.
Cephos Tablets (48's)	5½d. ea.	6d. ea.
Phosferine Tablets & Liquid	1/9½d.	1/11d .
Phosferine Tablets & Liquid	3/11d .	4/3d.
Yeast-Vite	1/10d .	1/11d .
Yeast-Vite	4/2d .	4/3d.
Phyllosan	3/7d.	3/9d .
Phyllosan	5/10d .	6/-d.
Phyllosan	12/2d .	12/6d .
Dr. Cassells	1/10d .	1/11d .
Dr. Cassells	4/-d.	4/3d .
Germolene	4/5d.	4/6d.
Germoloids	2/11d.	3/-d.
Germoplast	1/6d .	1/9d .
Germoplast	9d .	10½d.
Eno's Fruit Salt	2/11d .	3/ - d.
Eno's Fruit Salt	5/2d .	5/4d.
Fynnon Salt		3/ - d.
Beecham's Pills	1/9½d.	1/11d.
Beecham's Pills	3/11d .	4/3d.
Dinneford's	·	2/6d.
Veno's Cough Mixture		4/-d.
New Skin		2/3d.
A. & P. Infant's Powders		1/11d.
- · · · · · · · · · · · · · · · · · · ·		

Trade prices available on application

harmaceuticals Ltd.

PRICES REDUCED ON MACLEAN BRAND INDIGESTION TABLETS

New reduced trade prices for Maclean Brand Indigestion Tablets were introduced from 5th Sept. Reduced retail prices are not effective until 31st October. Order now to take full advantage of these two month's extra profit.

		New List	\$	Retail
Pack	Old List	Price from	Present	Prices from
	Price	5th Sept.	Retail Price	31st Oct.
12-tablet roll pack	9/6d.	7/7d.	1/3d.	1/-d.
22-tablet foil pack	17/-d.	13/11d .	2/3d.	1/10d.
44-tablet foil pack	29/8d.	26/6d.	3/11d.	3/6d.

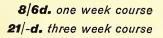
NEW HANDY 4-TABLET PACK FOR CEPHOS

A new 4-tablet pack, retailing at 6d., replaces the old two-for- $5\frac{1}{2}$ d. two-tablet packs. It is available in a 48-envelope display outer only—replacing the former 60 and 120-envelope sizes.

FORMULA 21 THE MEDICALLY APPROVED SLIMMING AID

As from 5th September the biggest selling slimming preparation in the United Kingdom will be handled by Beecham Pharmaceuticals Limited.

- 1 All orders and enquiries should in future be addressed to:
 - Beecham Pharmaceuticals Ltd., St. Helens, Lancs.
- 2 Formula 21 can now be bought direct and included in your Beecham Order.
- 3 New heavy television campaign starts in September.
- 4 September/October is a peak selling period—display Formula 21 NOW!







Get your share of

ASSURED SALES FOR THESE NATIONALLY ADVERTISED JOHN BELL PRODUCTS

A discount of 5% on orders to the value of £5 which may include other J. B. proprietaries



A well advertised product for cracked fingertips.



COLD CAPSULES

A famous best seller. Nationally advertised. Retail price 2/4 per tin. Bonus of 13 to the dozen on orders of 3 dozen.

Retail price 3/-. Your profit 1/- per tube. Plus bonus on 3 dozen.

Also CALYPSO

The only dry shampoo on the market. For use between wet shampoos or as an alternative to wet shampooing. Display this unique product, see it catch on fast.

Backed by the name for quality in BRITISH Pharmaceuticals

JOHN BELL, HILLS & LUCAS LTD.

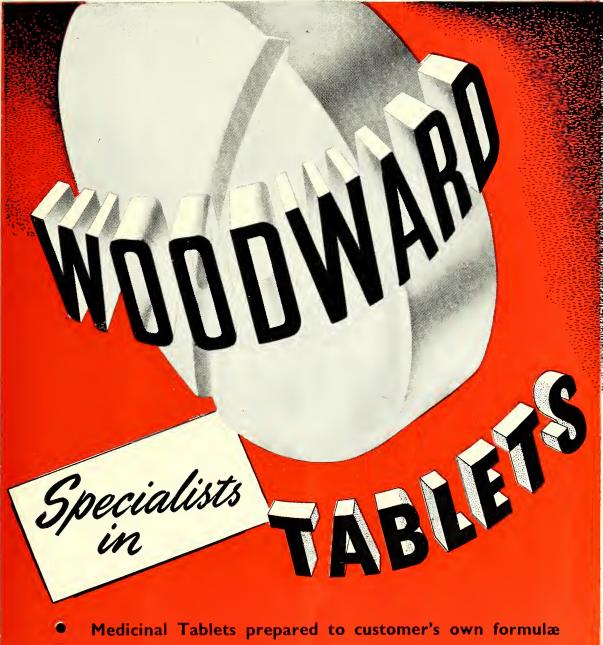
OXFORD WORKS, WORSLEY BRIDGE ROAD, LONDON, S.E.26.

Telephone: BECKENHAM 5007



For mouth ulcers. Protects as it heals. Another winner by John Bell, Hills & Lucas. Retail price 3/5. Your profit 1/4 per sale. Plus a bonus on 3 dozen.





- Quality and accuracy guaranteed
- Modern PlantPrompt Delivery

HOME AND EXPORT ENQUIRIES INVITED

G. O. WOODWARD & CO., LTD.

MANUFACTURING CHEMISTS

LARKHALL WORKS, MORRISH ROAD, BRIXTON HILL, LONDON, S.W.2

Telephone: TULSE HILL 9481-2-3

introducing

Dimyril



DIMYRIL

more effective: safe for patients of all ages

Dimyril is a new kind of antitussive: it is a single compound that acts on the cough centre to control only irritating, useless cough. Because its action is so selective, it produces no side-effects of any kind. And because it is so safe, Dimyril is eminently suitable for patients of all ages.

Each teaspoonful (3.5 ml.) of Dimyril contains 40 mg. γ-dimethylamino-a-isopropyl-a-phenylvaleronitrile citrate.

Dimyril Linctus

4 fl. oz.

Trade Price: 4/2d.

Dimyril Linctus

2 fl. oz.

Trade Price: 2/5d.



Genatosan Ltd Loughborough Leicestershire

GS8o



Burson Stockings, made exclusively on special knitting looms, are the product of many years' intensive research into the making of surgical stockings.

Always dispense and recommend Burson 2-Way Stretch Hosiery and ensure your customers' complete satisfaction. The quality—finish—colour and durability of Burson Hose make them the first choice of those who appreciate the best. Burson Stockings are fully fashioned and virtually indiscernible in use.

Burson Stockings are advertised in the Medical Journals and in a strong list of National Weekly Newspapers and Women's Magazines.

DISPENSE BURSON whenever 2-way stretch elastic or Lastex hosiery is prescribed

AVAILABLE FREE ON REQUEST WITH BURSON STOCKINGS:-

- Instruction Chart with details for measuring, fitting and exact adjustment to fit and tension.
- Individual Measurement and Order Forms.
- Instructions for mending and washing.
- Illustrated leaflets for your customers.

BURSON

TWO-WAY STRETCH HOSIERY
IS MADE FROM LASTEX YARN

(now [available in NYLON as well as Cotton at Drug Tariff
Prices for private patients)

Sole Distributors: - FASSETT & JOHNSON LTD.,

86, CLERKENWELL ROAD, LONDON, F.C. I

Also at 6 CROW STREET, DUBLIN

*Burson is the registered trademark of the Kendall Company Boston, Mass., U.S.A.

Seeing is buying







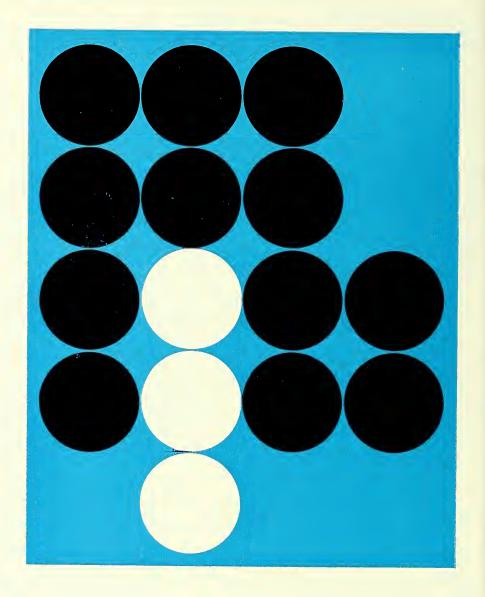






MACDONALD & SON LTD

PORTLAND MILL, ASHTON-UNDER-LYNE, LANCS.
TELEPHONE: ASHTON 4422 (10 LINES)
AND 25 HOLYWELL ROW, LONDON, E.C.2.
TELEPHONE: BISHOPSGATE 4809 (2 LINES)



Desogen® Geigy 88% bonus offer

Your winter requirements of Desogen lozenges

A. 90 for 72 B. 58 for 48 C. 28 for 24 Parcel £4. 0. 0. £ 6. 0. 0. £2. 0. 0. Outlay £11, 5. 0. £7. 5. 0. £3.10.0. Return Profit £5. 5. 0. £3. 5. 0. £1. 10. 0.

Bonus terms available only to the Retail Pharmacist through your local Mr. Geigy and direct from Wythenshawe

PH.167

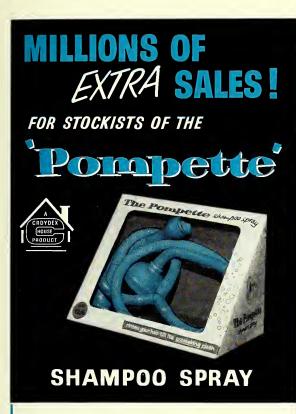
antiseptic throat lozenges

- 1. The ethical lozenge for your professional recommendation
- 2. Attractive pack for effective display
- 3. Competitive price 2/6d. for 24 lozenges4. High profit 88% on parcel "A"

Each lozenge contains:

0.5 mg of (Dodecanoyl-N'-methyl-aminoethyl)-(phenyl-carbamyl-methyl)-dimethylammonium chloride

Geigy Pharmaceutical Company Ltd. Wythenshawe, Manchester, 23



Pompette in the Women's Interest and Home Magazines means EXTRA PROFITS FOR YOU!

More than 6 million readers will see the

Pompette

advertising during November and December

Based on a widespread National coverage and appealing to all age and income groups, Pompette will be asked for Everywhere!

Look at this bold advertising campaignhalf pages in 9 large circulation magazines:

WOMAN'S STORY • **EVERYWOMAN** •

WOMAN & HOME . MY HOME . FLAIR . SHE **VANITY FAIR • TRUE STORY • TRUE ROMANCES**

increased demand.

Order through your usual wholesaler or in case of difficulty write to :-THE NEW CROYDON RUBBER Co. Ltd., Croydex House, 36 Mitcham Lane, London, S.W.16. Tel: STReatham 0171/4

Seeing buying



7,000,000 women see SILCOT advertised regularly in Woman's Own







MACDONALD & SON LTD

PORTLAND MILL, ASHTON-UNDER-LYNE, LANCS. TELEPHONE: ASHTON 4422 (10 LINES)

> AND 25 HOLYWELL ROW, LONDON, E.C.2. TELEPHONE: BISHOPSGATE 4809 (2 LINES)



the only way! Pompette

ENSURES THOROUGH RINSING

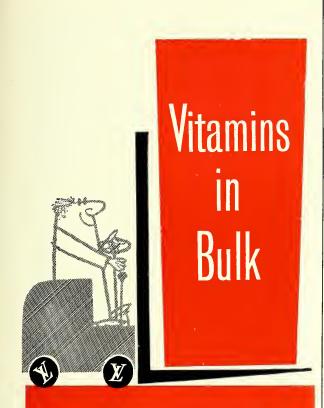
Make sure you have ample stocks to meet this tremendously



More and more housewives are buying more and more Domestos more and more often

You too can help... and profit from this increasing demand for Domestos. National advertising throughout the year will keep this popular product well in the public eye so that, by displaying Domestos, you'll be all set to serve when housewives come into your shop asking specially for Domestos.

IT PAYS TO DISPLAY DOMESTOS



Natural & Synthetic Vitamin A Vitamin B, (Aneurine Hydrochloride B.P.) Vitamin B.6 (Pyridoxine Hydrochloride B.P.C./U.S.P.) DL. Calcium Pantothenate U.S.P. Vitamin C. (Ascorbic Acid B.P.) Vitamin D₂ (Calciferol B.P./U.S.P.) Vitamin D₂ (Oily Concentrate) Natural Vitamin E (d-Alpha Tocopheryl Acetate) (d-Alpha Tocopheryl Acid Succinate) (Mixed Tocopherols) Natural Vitamin E. (Feed Grade) Folic Acid B.P./U.S.P. Inositol Nicotinic Acid B.P.

Nicotinamide B.P.

Get your vitamins from VITAMINS LIMITED

Bulk Sales Dept. Vitamins Limited (Dept. A.A.4). Upper Mall, London, W.6. Telephone: Riverside 5001 Telegrams: VITAMINS, LONDON, TELEX.

Seeing is buying





Putting Silcot
within reach of your
customers means
bigger profits
for you.

Unique Annual Discount Plan brings you up to 7½% Extra Profit!

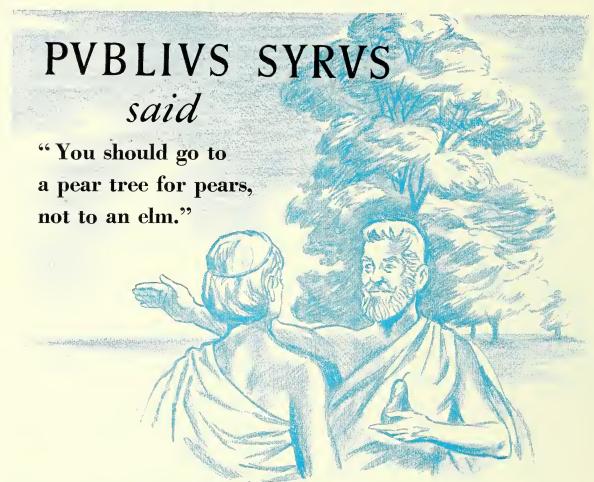




MACDONALD & SON LTD PORTLAND MILL, ASHTON-UNDER-LYNE, LANCS.

TELEPHONE: ASHTON 4422 (10 LINES)

AND 25 HOLYWELL ROW, LONDON, E.C.2. TELEPHONE: BISHOPSGATE 4809 (2 LINES)



But for fine chemicals go to the "Tree of Life". .

Enquiries are invited for:
ADRENALINE
ADRENOCHROME
MONOSEMICARBAZONE
ALPHANAPHTHYL ACETIC ACID
BISMUTH SALTS
BRUCINE AND SALTS
CAFFEINE AND SALTS
CHRYSAROBIN
EPHEDRINE AND SALTS
HYDANTOIN DERIVATIVES
ISOPRENALINE SALTS

METHOIN

NORADRENALINE AND SALTS
P.A.S. SODIUM
PIPERAZINE AND SALTS
RESERPINE
SANTONIN
STRYCHNINE AND SALTS
THEOBROMINE AND SALTS
THIOMERSALATE
QUININE AND SALTS
CINCHONA FEBRIFUGE
TOTAQUINA

Write or phone Dept. A for Quotations



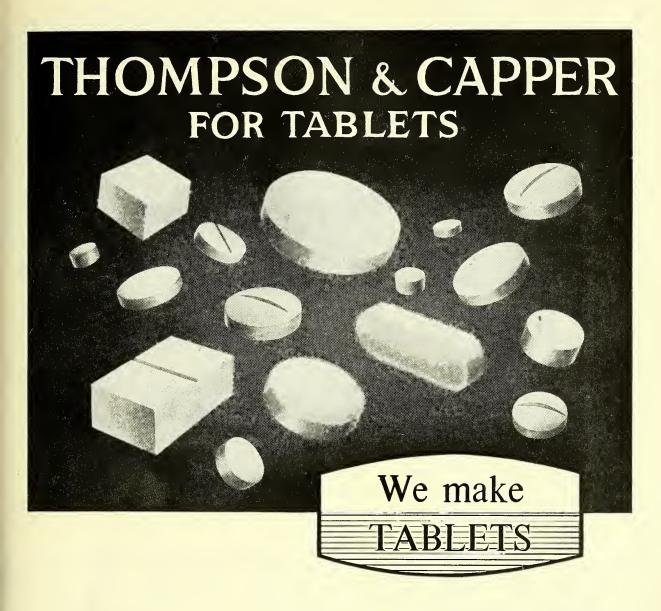
TREE OF LIFE Regd. Trade Mark

CARNEGIES

of Welwyn Limited

WELWYN GARDEN CITY : ENGLAND Phone: WELWYN GARDEN 5001 (10 lines)

Telex: LONDON 28676 Cables: CARNEGIES WELWYNGARDENCITY



Competitive Prices and first-class "Own Name" label service for Tablets of Aspirin and Compound Codeine Tablets.

So many people think of Thompson & Capper when they want good tablets, because only the best is good enough.

If it's official tablets you're after, or you would like to see your product in tablet form, then Thompson & Capper are the obvious choice.

Whatever your needs in the way of tablets, you can depend on Thompson & Capper.

THOMPSON & CAPPER LTD.

MANUFACTURING CHEMISTS, SPEKE, LIVERPOOL, 24

Telephone: Hunts Cross 1321

great SUCCESS with Bristow

Star Spray



daunched in London last autumn, new Bristow's star Spray—the lanolin-rich hairspray that sets and tyles—zoomed to top selling place overnight! Chat's what Bristow's lanolin products mean to your sustomers!

Now Bristow's Star Spray goes national on all T.V. etworks this autumn with vital 45-second commercials that will sell every last pack off your shelf! Chere's a top bonus for you . . . 66.7% clear profit. Your County Sales representative will give you full letails.

t's good business to stock and display Bristow's anolin Star Spray.

nd more to come!

OUNTY LABORATORIES LTD. BRENTFORD, MIDDLESEX

ISLeworth 4171



Johnson Johnson

POROUS ELASTIC ADHESIVE BANDAGE B.P.C



For support without discomfort

Johnson's Porous Elastic Adhesive Bandages reduce the risk of maceration and skin irritation to a minimum by combining the maximum area of ventilation with effective adhesion. They give firm, controlled support. Prescribable on Form E.C.10. Keep a representative stock of Johnson's Porous Elastic Adhesive Bandages always available against professional demand.

Johnson Pharmaceutical Division, Slough, Bucks.

(Gt. Britain) Limited

Products of the Wright-Fleming Institute of Microbiology are now available from Beecham Research Laboratories Limited

The following range of biological products of the Wright-Fleming Institute is now packaged and distributed to the medical profession, hospitals and pharmacists exclusively by Beecham Research Laboratories Ltd.

Acne Vaccine (Mixed) 'A'

Acne Vaccine (Mixed) 'B'
Bronchial Asthma, Mixed Vaccine for

Catarrh Vaccine

Cholera Vaccine

Diphtheria Prophylactic (Formol

Toxoid)

Diphtheria-Pertussis Prophylactic

Diphtheria - Tetanus Prophylactic

Diphtheria – Tetanus – Pertussis

Prophylactic

Influenza Vaccine (Bacterial)

Influenza Virus Vaccine

Pertussis Vaccine

Pollaccine

Rheumatic Vaccine

Staphylococcus Toxoid

Staphylococcus Vaccine (Mixed)

Staphylococcus Vaccoid

Tetanus Toxoid

Typhoid-Paratyphoid A & B Vaccine

Typhoid-Paratyphoid A, B & C Vaccine

Typhoid-Paratyphoid A & B and

Cholera Vaccine

Typhoid-Paratyphoid A & B Vaccine

and Tetanus Toxoid

Typhoid-Paratyphoid A & B Vaccine

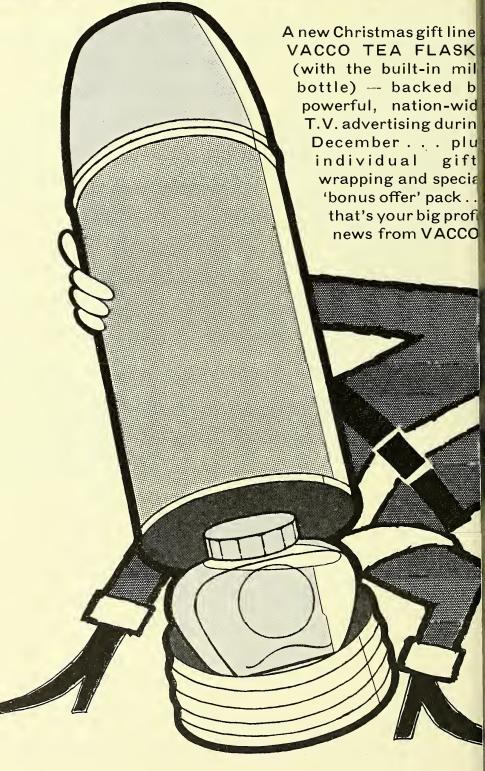
for Protein Shock



Sole agents:

Beecham Research Laboratories Limited, Brentford, England
Telephone: Isleworth 4111





T. V. Promotion



ACCO make news this Christmas—news nat means extra sales, bigger profits for you n popular VACCO Tea Flasks!

demand created by nation-wide T.V. advertising during December.

'bonus offer' pack—16 individually gift-wrapped VACCO Tea Flasks.

You'll profit from tremendous *Plus colourful, compelling pointof-sale showcard featuring 'gift' angle.

You'll profit from bumper *Plus generous 5% bonus discount for this special VACCO Christmas promotion.

astest off your counter this Christmas! That's the ACCO Tea Flask . . . with this gay, colourful Christmas ft sleeve. Order now from your usual wholesaler.

ACCO LIMITED, Grosvenor Gardens House, London, S.W.1.





whose modern mother insists on MODERN' products

when she visits her chemist

Show 'MODERN' baby products and you'll sell 'MODERN' baby products. Every modern mother knows from recommendation and from the national advertising in press, women's magazines and television that 'Modern' teats by **CANNON** with triple perforation and 3 flow sizes are the nearest to natural feeding. Order NOW from your wholesaler and ensure supplies!



BRITAIN'S TOP-SELLING BABY PRODUCTS

MODERN TEATS - MODERN
NURSER TEATS - MODERN NURSERS
MODERN SOOTHERS - JUNIOR
SOOTHERS - EASIFLOW TEATS
BA-BY-BYT TEETHING RINGS
BABY COT - NOAH'S ARK AND
COTTAGE DOLL HOT WATER BOTTLES





REGNA MANUFACTURERS SERVICE

On-the-spot service by factory-trained skilled engineers.



TO THE REGNA CASH REGISTER COMPANY

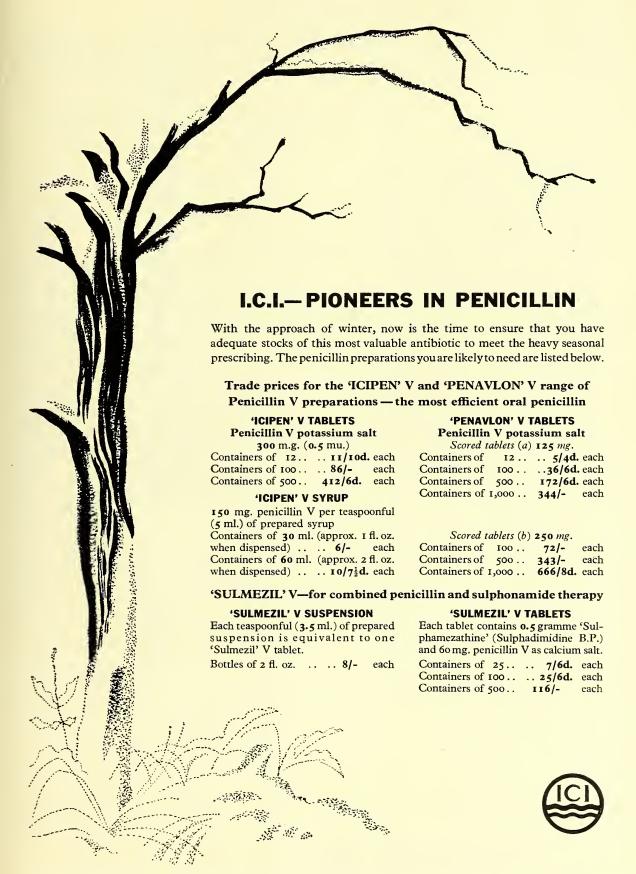
27, John Adam Street, London, W.C.2 Tel: TRA 3351-4 Please rush without obligation, illustrated multi-coloured leaflet together with full details of a REGNA for my business.

NAME

ADDRESS

A9





When your customers ask for 'vitamins'...

For general purposes

for nutritional support in convalescence or because of prolonged ill-health, BEMAX is particularly recommended.

For BEMAX contains a high proportion of protein (27%), vitamins of the B-complex and E, together with important minerals such as iron. Easily digested and readily taken with a variety of foods, it is invaluable at all age levels.

BEMAX

Packs of 5, 10 and 20 ozs.

For children and the elderly

and for the febrile, VITAVEL SYRUP is specially valuable. It is water-miscible and has a most attractive taste, readily acceptable to children and others who dislike fish-liver oils. It is a combination of the important vitamins, A, B₁, C and D in an orange-flavoured syrup base.

VITAVEL SYRUP

Basic price to N.H.S. 6 fl. ozs. 2/6, 40 fl. ozs. 16/-.

For pregnancy and lactation

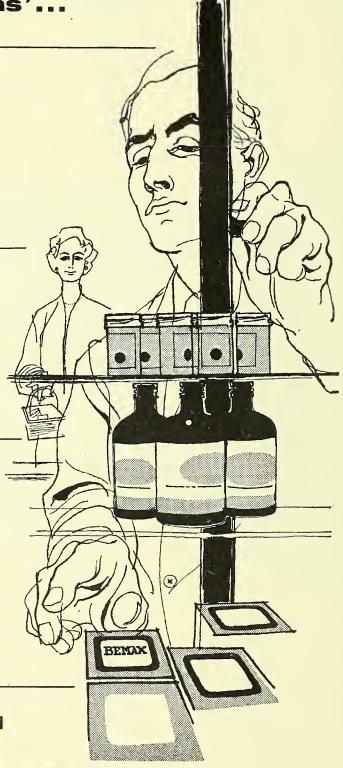
The special nutritional needs of the pregnant and lactating mother have been met in PREGNAVITE which has found favour with the medical profession for more than 20 years. This preparation supplies just those vitamins and minerals which are needed in increased amounts during pregnancy and lactation, in the quantities estimated to be needed in addition to normal dietary supplies.

PREGNAVITE

Packs of 60, 120 and 1,000. Basic price to N.H.S. 1,000 tablets 32/9.

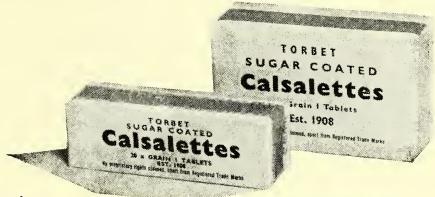
... recommend a product from





(DEPT. A.A.3.) UPPER MALL, LONDON, W.6.

Simple answer age old problem



Calsalettes $1/8\frac{1}{2}$ and $6/8\frac{1}{2}$

How many times each day are you asked for a safe and efficient laxative?

Tell your customers about Calsalettes.

Calsalettes are purely vegetable, completely safe and not habit-forming.

Along with Calsalettes
Torbet Lactic Oats
sprinkled on breakfast
cereal provide the
ideal complement to the
successful control of
constipation.



Torbet Lactic Oats 2/1 and 4/2

TORBET LACTIC OAT CO. LTD.

25-26 GREAT KING STREET, EDINBURGH

A new fast-selling Color-Glo series Sherry Shades

Brown Sherry

These fascinating brown to amber shades, with such appealing and descriptive names, are certain to be enormously popular with all the thousands of woman who want to improve and enrich the natural colour of their hair, without giving their hair an auburn or chestnut tone.

In addition, the Sherry Shades will conceal, absolutely naturally, a woman's early unwanted grey hairs.

Dark-Brown Sherry Amber-Brown Sherry Light Sherry

The Sherry Shades are as simple to use as Standard COLOR-GLO, and the effects last through 6-8 shampoos.

The Sherry Shades will have their own separate advertising campaign in full colour starting on September 14th. This campaign will be in addition to the heavy promotion of the existing nine popular COLOR-GLO shades, which will continue at its present high



Nation-wide full colour advertising campaign for the Sherry Shades starts SEPTEMBER 14th in WOMAN · WOMAN'S OWN DATE · WOMAN'S MIRROR HONEY · WOMAN'S REALM

Color-Glo

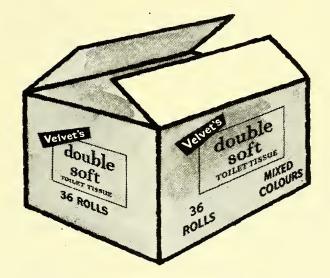
Order a full range of the Sherry Shades now!

Price 23/- per dozen bottles plus tax. Retail 3/10 per bottle.

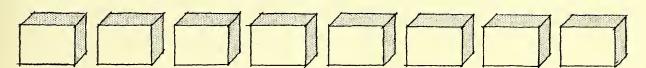
Your wholesaler has supplies or you can order direct from,

GOLDEN LIMITED, 7 Grosvenor Street, London W.1 Hyde Park 1671

Now this one case



takes the place of eight...



because it contains the equivalent of single and double packs in all four colours

Snow White Petal Pink Sky Blue **Primrose**



- X Only Velvet offer full size coloured soft 2-ply toilet rolls you can sell at 1/3 each or two for 2/4—so that you have all the advantages of double packs without having to stock them.
- And with Velvet you can make more profit, too. You still make 8d. when you sell two rolls ... and you make as much as 5d. when you sell a single roll.



Velvet's double soft

TOILET ROLLS

Cases containing 36 rolls of all one colour are, of course still available VELVET CREPE PAPER CO. LIMITED, Woodside End, Alperton, Middlesex

Two entirely new models of

Manesty mixers

... and the amazing FITZMILL

The NEW MANESTY '300' STAINLESS STEEL MIXER has 6 cubic feet working capacity. It is additional to the 'H' Mixer of 3 cubic feet capacity. Both with removable paddles, safety guards, transparent plastic lid and tilting gear.

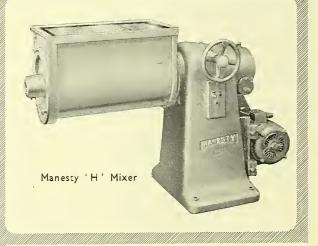
The NEW MANESTY DRUM MIXER has 2 cubic feet working capacity and can be supplied with interchangeable stainless steel or galvanised drums.

There is also the MANESTY FITZMILL for high speed Wet or Dry Granulation—Mixing—Chopping or Pulverizing.









Write for further details to:

MANESTY MACHINES LIMITED SPEKE, LIVERPOOL, 24

Telephone: Hunts Cross 1972 Telegrams: Manesty Liverpool, 24.



TABLET MACHINES . MIXERS . GRANULATORS . COATING PANS . PUNCHES AND DIES



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This winter you will be using regular supplies of galenicals, for your own specialities or for wholesale distribution to the dispensing chemists. In either case you will find StaffordAllenS Galenicals to be, as always, of the highest and most reliable quality, and available for prompt delivery. Up-to-date equipment and stringent analytical control ensures this traditional "Standard of Reliability".

liquid extracts
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WHEN COLDS & 'FLU STRIKE...

THIS GREAT
OFFER WILL
BRING CUSTOMERS
TO YOU...!



A COOPER PRODUCT

Medic-aire

AEROSOL

Cold Relief

AND KILLS
AIRBORNE GERMS

NEW WAY TO ATTACK COLDS

Relief for the sufferer—
Protection for the family with Medic-aire 2-way action

Now with Medic-aire your customers can take *double* action: (1) to relieve their colds, (2) to help prevent the infection spreading.

AT THE TOUCH OF A BUTTON

Medic-aire treats the air in the home. A touch of the button releases not just an ordinary spray, but a fine mist which spreads to every corner of the room and floats in the air for hours, giving RELIEF and PROTECTION.



12,300,000

customers will get this coupon...

Yes! The 12,300,000 readers of Household Shopping Guide will get this wonderful 1/offer coupon in September. Think what this means—if only 1% of them redeem their coupons for Medic-aire Cold Relief, it means a dozen extra sales for every chemist in the United Kingdom. Make sure you have stock to meet the demand.

And remember ...

- THESE COUPONS ARE REDEEMABLE ONLY IN CHEMISTS...
- —AND YOU CAN EXCHANGE THE COUPONS FOR CASH PLUS A HANDLING BONUS WITH YOUR COOPER REPRESENTATIVE.
- PLUS NATIONWIDE TV SUPPORT ON ALL STATIONS RIGHT THROUGH THE PEAK COLD AND 'FLU MONTHS NOVEMBER JANUARY FEBRUARY
- PLUS ARRESTING DISPLAY AIDS
- PLUS SPECIAL STOCK-UP BONUS (closing Nov. 30th)

BBBBBBBBB COUPON BBBBBBBB THIS COUPON IS WORTH opellee Hand this 1/for a full-size **Medic-aire** COLD RELIEF

TO THE DEALER: Our representative will give you one shilling in cash for this coupon provided it has been accepted from your customer in part-payment for one tin of Medic-aire. Cooper, McDougall & Robertson Ltd.

 $\mathbf{5}_{o}^{o}$ on orders of 4 dozen and over.

 $\mathbf{2}_{\mathbf{2}/\mathbf{0}}^{\mathbf{10}}$ on orders of 2 - 3 dozer

COOPER Research

 bringing you better aerosols, more customers, bigger profits this winter with Medic-aire.

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Alkaloids and Salts

DIGITOXIN, EPHEDRINE, ERGOTAMINE, QUININE, SANTONIN, STRYCHNINE, THEOBROMINE.

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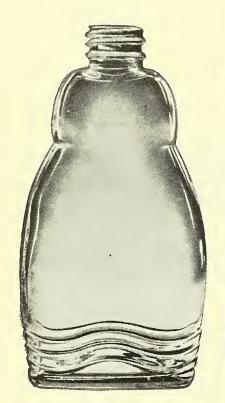
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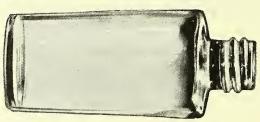
Phone: Berkhamsted 1880/1/2. Cables: Lake Berkhamsted





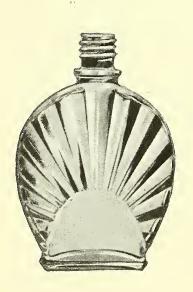


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Designers and Manufacturers o







'Educating Jane'

"Figaro shavers on 14 days trial...

all very well, Mr. Hargreaves, but it depends whether it's a free trial for us or the customers. Supposing someone thinks he's just going to get a fortnight's free shaving!"

"It's free to us, Jane, and we can pass it on to our customers. When a Figaro goes out on trial it almost always means a sale for us. Even if it does come back into stock requiring attention, Ever Ready will give it a full factory service for us free of charge. Now where are you going?"

I'm moving that Figaro display to the front of the window,

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FIGARO I 10 gns. Tax Paid FIGARO II £8.10.0 Tax Paid FIGARO III £7.2.6 Tax Paid





THE "FILLMASTER"

TRADE MARK

AMPOULE, BOTTLE AND VIAL FILLING MACHINE

and accessories:

CAP-FILL twin-needle filling stem

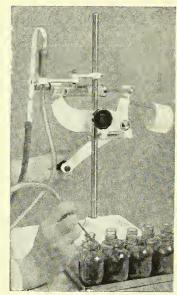
TRAY-FILL

mobile filling stem (shown here)

AID-FILL auto-centring filling stem

SIMPLE
PORTABLE
HAND-OPERATED
LOW-PRICED
PRECISION-BUILT
DRIPLESS FILLING
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307 calories per litre

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Vitrum

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Lastofine

—these lightweight yarn nylons provide your custom-

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LASTOFINE are supplied by return of post on receipt of your order and can be obtained in foot sizes, or toeless stocking, in large, medium or small. LASTOFINE are, of course, available under the National Health Scheme.

Endorse your orders "Lightweight Yarn".



Lastoskeer

—the NEW superfine Lastonet

stocking has now been approved for National Health Scheme supply.

If your customer prefers a lightweight stocking which, when worn, could easily be mistaken for an ordinary stocking, recommend the best — recommend LASTOSHEER.

Made to individual measurements, this lightweight elastic net stocking is available in 48 hours. Complete with heel — with or without toes as required.

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SINCE 1768 the House of Chiris has dedicated itself to the Fifth Sense. In the development of Essential Oils, Floral Absolutes, Chemical Isolates, Synthetic Chemicals, and all those creations and specialties which combine industrial aromatics with natural products and produce fragrance, the House of Chiris has a cherished history. Today Chiris maintains laboratories headed by experienced chemists who have available to them not only the accumulated knowledge of generations of Chiris perfumers and chemists, but also the research facilities of five modern laboratories located in Grasse and Paris, London, Sao Paulo (Brazil), and New York City. Whether Essential Oils, Isolates, or combinations therof, are used as fragrance constituents by the perfumery, soap, cosmetics or allied industries, we are happy to be consulted.

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4-oz., 8-oz. and 16-oz. **BOW-FRONT PANELS** 1-oz. to 8-oz. and 16-oz. OLIVE OIL BOTTLES $2\frac{1}{2}$ -oz., 5-oz. and 10-oz. RECTANGULAR TABLET BOTTLES Nos. 1,2,3,4,5,6 and 9 sizes. OVAL TABLET BOTTLES Nos. 1 to $7\frac{1}{2}$ sizes. **ROUND SCREW JARS** Tall and semi-squat PANEL FLATS 1-oz. to 4-oz. VIALS ½-oz. to 3-oz.

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AIRFLOW AIRFLOW DOUBLE HEAT (finned on one side only)

24 Hour Service

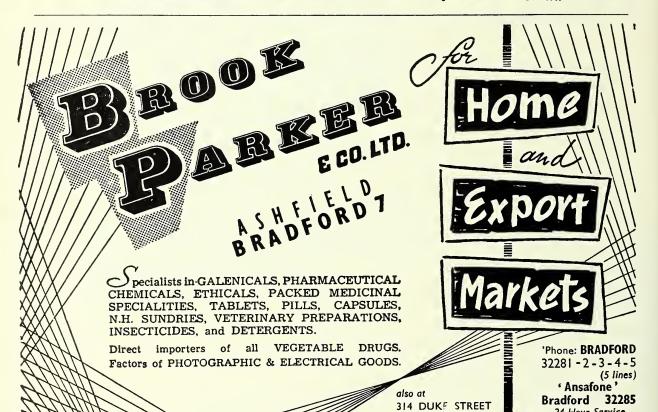
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from an appreciation by a customer



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THE FOREMOST TABLET HOUSE

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Recommend Brown-Glo to your customers who are going grey



-it will be a big profit earner for you!

BROWN-GLO is bringing about a revolution in the hair colouring field because it's the first absolutely harmless and semi-permanent way of bringing back natural colour to greying hair.

Women *love* BROWN-GLO because there's nothing drastic about it, because if no further application is made the effects gradually fade with

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Powerful national advertising is reaching the thirteen million women over 30 in this country, telling them these facts about BROWN-GLO. Catch their eye with the attractive packs and full colour showcards and you'll gain new—and continuing—business.

Trade price 31/- per doz.
plus 50% tax
Retails at 5/2 per tube
Brown-Glo is available
in six natural shades
DARK BROWN
DARK WARM BROWN
MID BROWN
MID WARM BROWN
LIGHT BROWN
LIGHT GOLDEN BROWN

Recommend the shade nearest to your customer's own natural hair colour

Brown-Glo HARMLESS SEMI-PERMANENT COLOURING

(Sister product of Color-Glo)

Colours Greying Hair to a natural shade of Brown A creation of

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Republic of Ireland enquiries to: Lilmar Pharmaceuticals Limited, Santry, Dublin

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Gelatine Capsules

... manufactured for you by the fully automatic GLOBEX machine, ensures unique, elegant and distinctive presentation for your product.

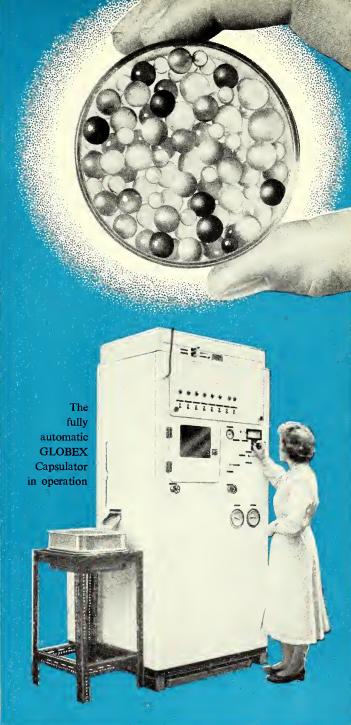
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The name that quarantees accuracy

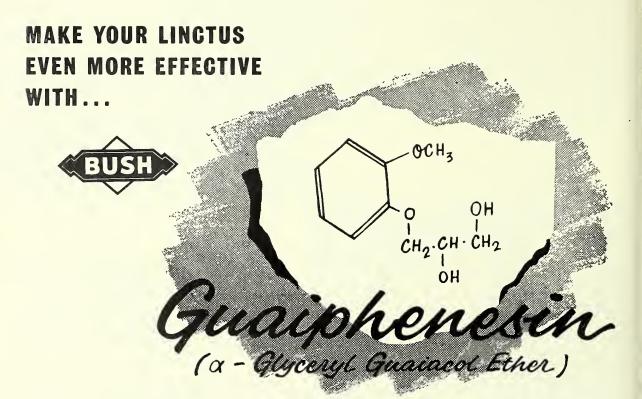
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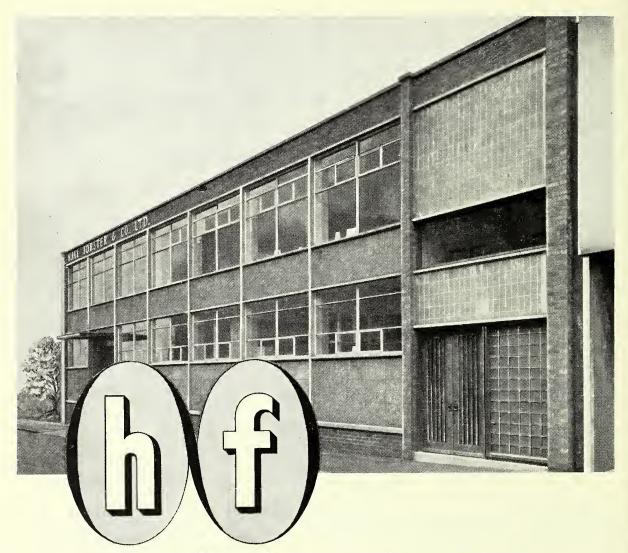
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Almacarb tablets are prepared from an aluminium hydroxide-magnesium carbonate co-dried gel made by an entirely new process. Aluminium hydroxide gel has been used for some years as an antacid in suspension, but until the introduction of Almacarb no means had been discovered by which its acid-neutralising capacity could be retained throughout the process of drying and tabletting. In Almacarb the full antacid potential is retained. ALMACARB is being regularly advertised to doctors, and may be expected to be increasingly prescribed. Please make sure that you can meet prescription demand.

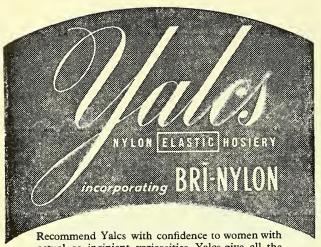
THE NEW IMPROVED ANTACID TABLET

(BDH) Habburt

Peppermint-flavoured tablets, foil-wrapped in strips of 10.

Cartons of 40 tablets 3/-5/3 200 tablets 12/-(subject (Inc. to P.T.)

THE BRITISH DRUG HOUSES LTD. LONDON, N.1



actual or incipient varicosities. Yalcs give all the therapeutic support of true two-way stretch-without putting a strain on vanity!

Yalcs are available ex stock—at full trade discount -in two types:

Superfine) Retailing at 63/- pair

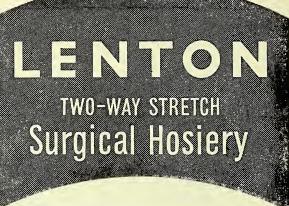
SERVICE Retailing at 53/3 pair

Yalcs Service may be supplied against N.H.S. prescription in Nylon Elastic Yarn (Lightweight) Two-Way stretch.

Yalcs Elastic Socks for men also available.

Display material, leaflets, shade cards available from Sales Agents: -

GLENSIDE (LONDON) LTD, 37 Percy St, London, WI



For strong support in severe cases of varicosity, Lenton stockings are made from hard-wearing cotton-covered elastic. Soft-textured, with stretch Nylon welts, they can be recommended to your customers for comfort and therapeutic firmness. Lenton can be dispensed against prescriptions for "two-way stretch elastic yarn hosiery." They are available in two styles, in small, medium and large sizes.

ABOVE KNEE RETAILING AT 53/3 A PAIR BELOW KNEE RETAILING AT 45/9 A PAIR

Open-toed for coolness, with closed heels for a snug fit, Lenton hosiery can be worn by both men and women. Lenton are made by the manufacturers of Yalcs stockings.

Details from Sales Agents:

QLENSIDE (LONDON) LTD., 37 PERCY ST., LONDON W.1





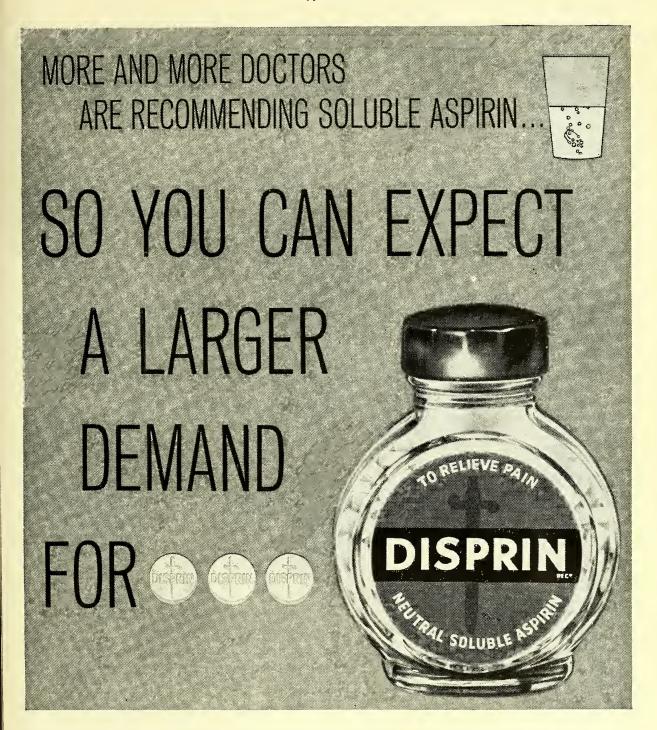
for **ASTHMA** and **BRONCHITIS**

Tabasan Tablets are universally famous for speedy relief of Asthma, Bronchitis and Hay Fever . . . they are absolutely safe and invariably result in repeat business.

Order Tabasan to-day. They sell and sell and sell.

	Cost per dozen	P. Tax	Ketaii
12's	9/8	2/5	1/6
50's	21/-	5′/3	3/2
100's	37′/-	9′/3	5/7

AYRTON SAUNDERS & CO. LTD. HANOVER ST. LIVERPOOL



To-day, the advantages of soluble aspirin are becoming more and more appreciated as the form of aspirin less likely to leave acid particles in the stomach.

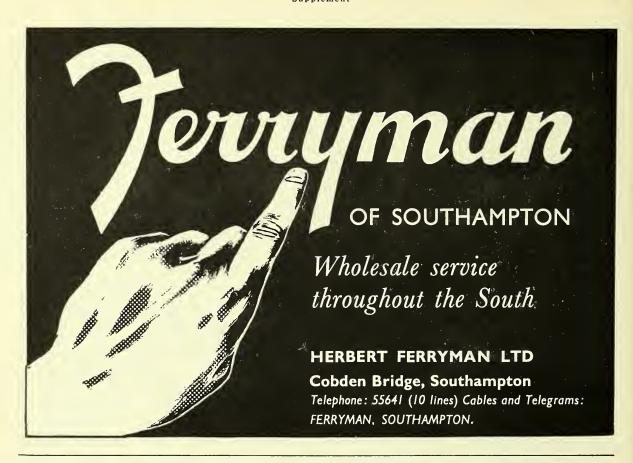
In the soluble aspirin field, the brand your customers know is Disprin—the original soluble aspirin.

Disprin is an excellent, long-established product, and it is very well advertised through national TV and press.

So keep a good stock of Disprin—you can recommend and sell it with confidence.

RETAIL PRICES:-

Bottles of 26 tablets, 1/11; 50 tablets, 3/2. Foil packs of 8 tablets, 8½d.; 28 tablets, 1/11; 100 tablets, 5/4½. Disprin Junior (for children): Foil packs of 16 tablets, 8½d.; 48 tablets, 1/9 (each tablet providing an exactly measured dose).







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You mustn't miss Dreamland—the electric blanket which gives all-through, all-over warmth. You mustn't miss Dreamland—with its hottest-ever advertising campaign, its family peak-hour spots on all television networks, its eye-catching sales aids, its £5,000 prize competition—and its extra 5% discount for you! You might miss Dreamland and be left right out in the cold—if you don't order now . . . and order plenty.

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confirms the singular safety of

'DISTAVAL'

This case (B.M.J., 2, 635, 59) is typical of an increasing number of reports, confirming the remarkable safety of 'Distaval'—the non-barbituric sedative and hypnotic. Today, of course, the dangers of barbiturate poisoning are a source of very real concern to the medical profession. Little wonder that more and more doctors are turning to 'Distaval' as the rational answer to this urgent problem.

'DISTAVAL'

'DISTAVAL' 25 mg. tablets in tubes of 24 and bottles of 100, 500 and 1,000. 'DISTAVAL' FORTE 100 mg. tablets in tubes of 12 and bottles of 100 and 500.

As a night-time hypnotic at bedtime:

As a day-time sedative:

DOSAGE:

Adults: 50 mg.-200 mg. Infants and children:

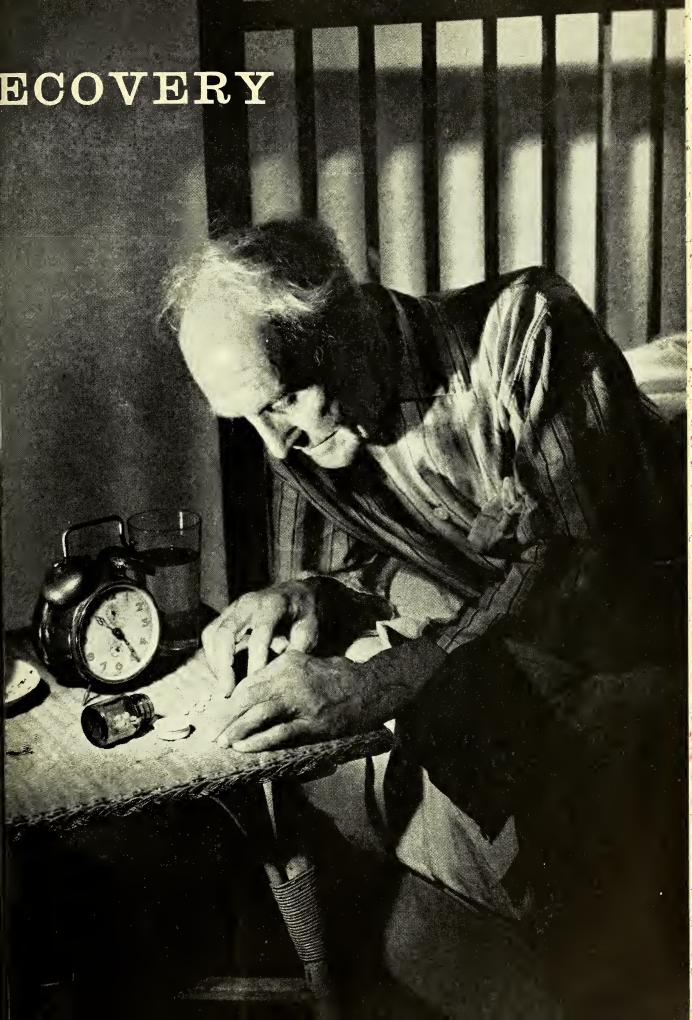
25 mg.—100 mg.

Adults: 25 mg. two or three times daily. Infants and children: Half to one 25 mg. tablet, one to three times daily.

THE DISTILLERS COMPANY (Biochemicals) LIMITED BROADWAY HOUSE, THE BROADWAY, WIMBLEDON, LONDON, S.W.19

Telephone: LIBerty 6600

Owners of the trade mark 'Distaval'



BAUMOL SOAP







brings you profit—25 per cent: you pay 2s. 6d. for a box of 3 tablets and you sell it for 3s. 1½d. (plus 7½d. tax) BAUMOL SOAP brings you professional satisfaction: Duncan Flockhart, well-known to you all your professional life, have sold this soap through pharmacists for about sixty years—mostly on personal recommendation and entirely without 'ballyhoo'.

It says much for its quality,

for the co-operation of pharmacists and for the discrimination of a large section of the community that the sales of Baumol Soap continue to increase.

Your wholesaler carries stocks.

A discreet yet telling showcard is available.

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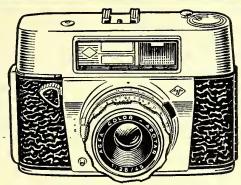
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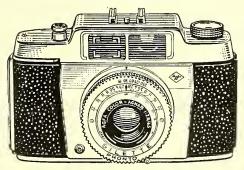
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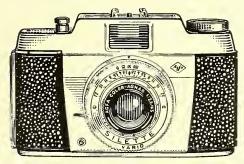
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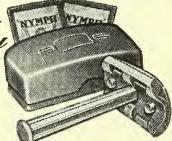


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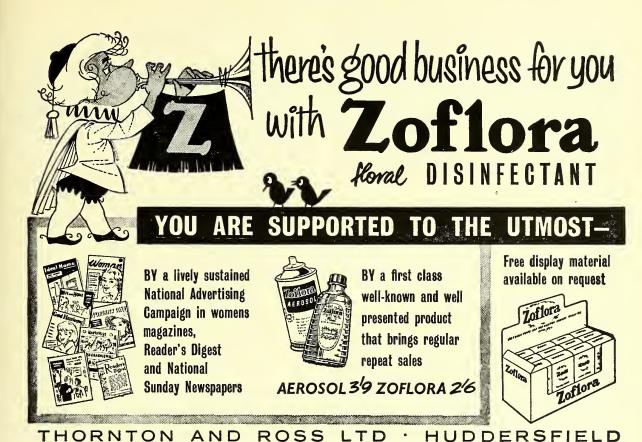
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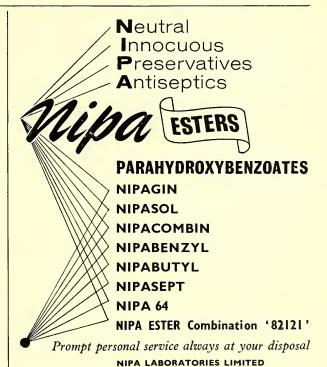
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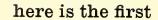
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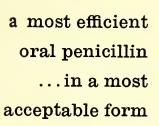


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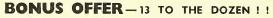
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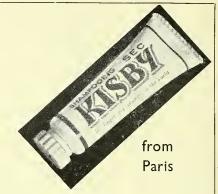
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C 3166

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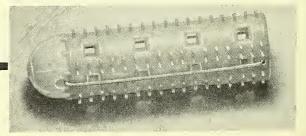
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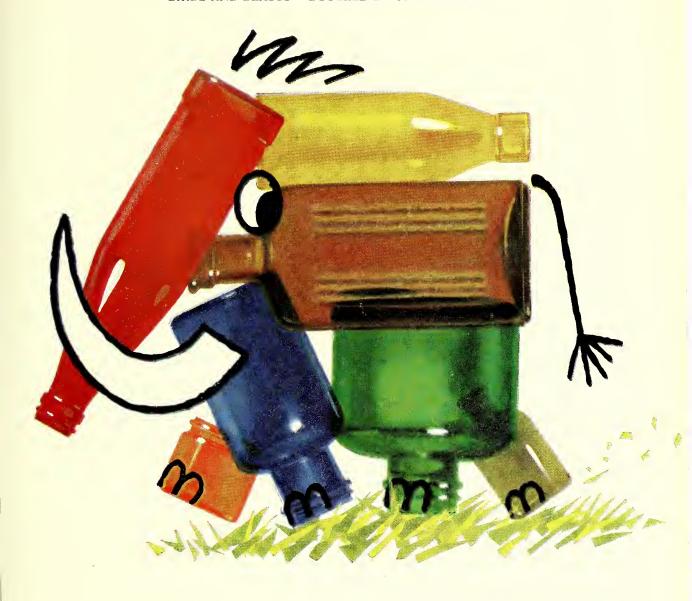
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